Missouri Healthcare Information Technology Task Force

Final Report

Submitted to Governor Matt Blunt
September 2006

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Executive Summary

The recent work of President George W. Bush, the federal government, and natural disasters have created the ideal landscape and reinforced the need for improvements in healthcare information technology. The absence of readily available, comprehensive, patient-centric health information and secure online access to clinical knowledge negatively affects healthcare at every level. The ability to exchange healthcare information throughout the nation can provide drastic cost savings and greatly improve patient safety. Missouri Governor Matt Blunt recognized this need and took a proactive approach by creating the Missouri Healthcare Information Technology Task Force in January of 2006.

The Missouri Healthcare Information Technology Task Force is charged with providing Governor Blunt with recommendations on how healthcare information can be readily available to health care providers, consumers and public health agencies in order to make the best healthcare decisions and to improve patient safety by reducing medical errors. The Task Force, through this document, provides Governor Blunt with its recommendations on September 1, 2006.

To provide direction to the task force in creating recommendations, a set of guiding principles was defined during the first meetings of the task force. The guiding principles provide a foundation for healthcare information technology and include a consumer-centered, provider-driven system, utilizing established data standards to provide a framework for connectivity to achieve high quality, cost effective care.

The task force created six working groups to address the items in the executive order. More than fifty-five individuals from throughout the State of Missouri, representing hundreds, if not thousands of stakeholders, participated in the working groups. Each working group provided recommendations to the task force members. The members evaluated the proposed strategies and formed a set of overall recommendations to provide to Governor Blunt.

When all six working groups completed their recommendations, one item stood out in each of the six reports – the need for a steering committee to continue working past the December 31, 2006, sunset of the task force. The steering committee will be responsible for providing direction to the state, as well as creating any necessary organizational structures required to facilitate the exchange of healthcare information.

In addition to the formation of the steering committee, four other broad strategic areas are recommended:

1. Mirror initiatives at the national level by requiring all state-funded entities to develop a plan to adopt healthcare information technology.
2. Reformation of the Medicaid system to embrace healthcare information technology. As the Missouri Medicaid system is transformed, it is important to embrace healthcare information technology in a manner that ensures interoperability, increases consumer involvement, reduces cost and provides transparency of quality to position Missouri Medicaid to be a leader in the healthcare industry.
3. Improve public health. Public health improvement requires the collection of timely, accurate and detailed information that enables assessment of community health, risk factors, research and reporting of critical findings back to the public so proactive, informed decisions can be made. Prevention is the key to controlling epidemics.
4. Expand telehealth and telepharmacy resources in Missouri. Telemedicine is experiencing monumental growth in Missouri and across the nation. The use of telemedicine significantly increases access to care and reduces overall cost.

The delivery of this report to Governor Blunt begins an exciting era in the State of Missouri, and positions Missouri to be a leader in healthcare information technology and exchange. It is an era that has potential to bring about a major shift in healthcare delivery and efficiency, thus providing for lower costs and improved patient safety.

Introduction

Missouri Healthcare Information Technology Task Force

Lack of information can have negative health consequences at every level of society. Timely, accurate and reliable health information can aid healthcare practitioners in providing individualized, quality healthcare at the best possible price. Consumers need to understand and access personalized health information to actively manage their own health and make better-informed healthcare decisions. Public health officials need accurate, timely and reliable information about the populations they are charged with protecting.

Patient data is stored primarily in paper form and housed with individual providers, resulting in fragmentation of the healthcare industry. These systems are expensive, difficult to transport and impossible to locate if the patient is treated outside of his or her regular service area.

To work most effectively and efficiently, health and healthcare professionals, state and local public health officials, policy leaders and legislators need to embrace technological advances. Governor Matt Blunt signed Executive Order 06-03 on January 17, 2006 establishing a fourteen-member Healthcare Information Technology Task Force. See Appendix A to review the Executive Order. The task force consists of two pharmacists, an attorney, three president/CEOs of large health systems, three physicians, a chief medical officer at a major medical center, Missouri state government's chief information officer, a third party benefit administrator, the CEO of a non-profit healthcare consulting firm and the Director for the Missouri Department of Health and Senior Services. See Appendix B for a list of task force members.

The Governor created the task force to ensure that healthcare information can be readily available to healthcare providers, consumers and public health agencies in order to make the best healthcare decisions and to improve patient safety by reducing medical errors.

The task force was charged with exploring the six areas listed below related to healthcare information technology. The task force timeline and guiding principles are supplied in Appendix C.

- Reviewing the current status of healthcare information technology adoption by the healthcare delivery system in Missouri;
- Addressing potential technical, scientific, economic, security, privacy and other issues related to the adoption of interoperable healthcare information technology in Missouri;
- Evaluating the cost of using interoperable healthcare information technology by the healthcare delivery system in Missouri;
- Identifying private resources and public/private partnerships to fund efforts to adopt interoperable healthcare information technology;
- Exploring the use of telemedicine as a vehicle to improve healthcare access to Missourians; and
- Recommending best practices or policies for state government and private entities to promote the adoption of interoperable healthcare information technology by the Missouri healthcare delivery system.

Six working groups were formed to explore these issues in greater detail. See Appendix D for a listing of working group participants.

This report is a call to action and outlines recommendations developed by the Missouri Healthcare Information Technology Task Force.

National Agenda

Over the past few years, there has been a tremendous amount of activity on a national level to promote the adoption of Health Information Technology (HIT). The Department of Health and Human Services (HHS), as well as the Office of the National Coordinator for Health Information Technology (ONC) have put forth significant efforts to catalyze interoperability and health information exchange.

On the national level, President George W. Bush has signed two Executive Orders addressing the widespread adoption and utilization of HIT. On April 27, 2004, the President instituted Executive Order: Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator in order "to provide leadership for the development and nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of healthcare." This policy describes a vision for developing a nationwide interoperable health information technology infrastructure that: [1]

- Ensures that appropriate information to guide medical decisions is available at the time and place of care
- Improves healthcare quality, reduces medical errors, and advances the delivery of appropriate, evidence-based medical care
- Reduces healthcare costs resulting from inefficiency, medical errors, inappropriate care, and incomplete information
- Promotes a more effective marketplace, greater competition, and increased choice through the wider availability of accurate information on healthcare costs, quality, and outcomes
- Improves the coordination of care and information among hospitals, laboratories, physician offices, and other ambulatory care providers through an effective infrastructure for the secure and authorized exchange of healthcare information
- Ensures the patients' individually identifiable health information is secure and protected

Since its creation, ONC has focused on standards, a network prototype, and product certification.

On August 22, 2006 the President Bush signed a second Executive Order: Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs. It states, "agencies shall comply with the requirements of this order by January 1, 2007."[2] The purpose of the Executive Order is to ensure:

- Healthcare programs administered or sponsored by the federal government promote quality and efficient delivery of healthcare through the use of HIT
- Transparency regarding healthcare quality and price, and better incentives for program beneficiaries, enrollees, and providers
- Relevant information is available to beneficiaries, enrollees, and providers in a readily useable manner and in collaboration with similar initiatives in the private sector and nonfederal public sector

> "When HEALTH is absent, wisdom cannot reveal itself, art cannot manifest itself, strength cannot be exerted, wealth becomes useless, reason becomes powerless."
>
> Greek Physician and Philosopher Herophilus, 300 BC

The Executive Order addresses interoperability which is defined as "the ability to communicate and exchange data accurately, effectively, securely, and consistently with different information technology systems, software applications, and networks in various settings, and exchange data such that clinical or operational purpose and meaning of the data are preserved and unaltered."[2]

Currently, the Department of Health and Human Services has adopted SNOMED (Systematized Nomenclature of Medicine) as a standardized medical vocabulary. Meanwhile, the Health Level 7 (HL-7) organization has been requested to develop a standard set of functionality that should be present in an electronic medical record.[3] Additionally, HHS has created the Consolidated Health Informatics project. The description of this project is stated as: "Adopts a portfolio of existing health information interoperability standards (health vocabulary and messaging) enabling all agencies in the federal health enterprise to "speak the same language" based on common enterprise-wide business and information technology architectures."[4]

Perhaps one of the most exciting projects currently underway is the development of prototypes for the Nationwide Health Information Network (NHIN). These prototypes will test critical components of the NHIN, such as patient identification, data locator services, security, as well as the feasibility of large-scale deployment.[5] The NHIN will be the foundation for Regional Health Information Exchanges (RHIO) and Health Information Exchanges (HIE), which will serve local and regional areas. RHIOs and HIEs will provide for day-to-day data exchange between patient care facilities within a geographic area. These RHIOs and HIEs will remove the need to complete the same paperwork and medical history over and over again with each new provider seen. The NHIN is what will make exchange between RHIOs and HIEs feasible, thus making medical information available to providers throughout the country.
In addition to providing for better patient care and reduced costs of care, these efforts align with those of CDC and their PHIN (Public Health Information Network) project to provide better public health monitoring and surveillance capabilities. PHIN standards allow public health agencies to receive data streams from healthcare providers and detect abnormalities in the data. These capabilities allow for earlier detection of disease outbreak or bioterrorism attacks. Through the adoption of HIT in healthcare facilities, and the adoption of data standards, public health agencies can receive real-time data for reporting to CDC via PHIN.

While all of these activities are great for the advancement of HIT, the State of Missouri must put forth the effort required to keep up with these national activities and prepare for the National Health Information Network. The Missouri Healthcare Information Technology Task Force is a first step towards identifying the current status of HIT within Missouri, as well as defining the areas that Missouri needs to focus on in order to facilitate the adoption of HIT within the state.



Current State of Healthcare Information Technology in Missouri

The Current Status Working Group obtained information through a statewide assessment to evaluate the status of healthcare information technology adoption in Missouri by healthcare providers, including hospitals, physician's offices, health plans, local public health agencies, long-term care facilities and pharmacies.

Working Group Composition

State-wide representation was obtained through a variety of professional health-related associations and organizations. The following organizations were represented: Missouri Pharmacy Association, Missouri Hospital Association, St. Luke's Health System, Health Information Management Association, Missouri Association of Osteopathic Physicians and Surgeons, Missouri State Board of Senior Services, Primaris, Missouri Association of Health Plans, Blue Cross/Blue Shield, Wellpoint, Missouri State Medical Association, Missouri Healthcare Association, Missouri Assisted Living Association, Missouri Association of Nursing Home Administrators, Missouri Primary Care Association, Missouri Rural Health Association, Missouri Association of Local Public Health Agencies, Missouri Dental Association, Missouri Optometry Association, Missouri Nurses Association, Department of Mental Health, Department of Social Services, Division of Medical Services; Department of Health and Senior Services, and health laboratories.

Survey Tool

The working group developed a survey, appropriate for statewide distribution through multiple professional associations, to assist in broadening the understanding of the current status of healthcare information technology availability, utilization and efficacy within the State of Missouri.

The survey consisted of six sections:

Profile – used to gain an understanding of the type and size of healthcare organization, the position within the facility, the facility gross revenue and contact information.

Level of Adoption – used to assess the current level of adoption within a facility and the barriers to adoption.

Areas of Implementation – used to determine the components of the electronic health system, whether the system was built or purchased, the system's owner, the length of time the system had been utilized, and whether implementation was planned.

Cost – this category defined how the electronic health system was purchased, the total cost of the system, on-going annual costs, estimated savings to the organization through the use of the system, types of savings the organization hopes to achieve from utilization and the estimated return on investment.

Information Exchange – this category was used to identify the level of information exchange the organization was involved in, the types of data sharing repositories currently utilized and any Regional Health Information Organizations (RHIOs) or Health Information Exchanges (HIEs) the organization is involved with.

Satisfaction – this optional section was used to assess overall satisfaction with electronic health records and telehealth systems, whether the individual would recommend the system, whether the system was a worthwhile investment, satisfaction rates related to improved patient safety, ability to reduce duplicative procedures, ability to reduce medical errors, improved coordination of care with other providers, improved coordination with patients, improved coordination with payers, improved coordination with hospitals/ancillary sites, whether adoption enhanced HIPAA compliance, improved access to healthcare for the patient, improved efficiency and improved public health monitoring capabilities.

The survey yielded the following current status information:

The rate of adoption in the state of Missouri is relatively low although all five of the entities (hospitals or systems of hospitals; healthcare provider offices/clinics; mental/behavioral health facilities; long term care/skilled nursing facilities; and local public health agencies) examined reported its use.

Of the four information technologies (telehealth, electronic health records, e-prescribing/CPOE, and Laboratory Information Systems) examined, Laboratory Information Systems was the most often mentioned by the hospitals and healthcare provider offices, followed by electronic health records. Telehealth and E-prescribing were mentioned less often. Use of all four in/by one entity was rare.

All five groups reported using electronic health systems to some extent. Among hospitals, the top five components of an electronic health system in use were laboratory information, patient registration, scheduling, radiology and pharmacy. For the other large group, healthcare provider Ooffices, the top five were clinical data, patient registration, scheduling, laboratories and billing.

Almost two-thirds of the hospitals with electronic health systems that responded said they had used it for over two years. Nearly half of the healthcare providers had used it for over two years. A fair number had just begun its use in the last six months.

Of those who reported not having an electronic health system, the Mental/Behavioral Health, Local Public Health and LTC/SNF agencies said they had no plans to implement it. In contrast, over half of the respondents for the two large groups, Hospitals and Healthcare Provider Offices, said they were either implementing it or planning to. For Hospitals and Healthcare Provider Offices who said they had no plans to implement EHS, the most frequently mentioned barrier was 'lack of financial support'.

The majority of respondents said they had purchased systems from vendors rather than having them built internally.

Total costs for EHS reportedly spanned the range from under $25,000 to $11 million or more for the hospitals, and some reported very high annual costs as well. Two thirds of the hospitals with electronic health systems reported spending over $1 million dollars. Less than one in four respondents for either the hospital or healthcare provider offices reported savings; however, a majority of these two groups did not respond to this item. The most frequently mentioned type of savings for both types of agencies was an "increase in the revenue cycle". It is interesting to note that while the majority of survey respondents did not expect a return on their investment, they still felt investment of healthcare information technology was worth the investment.

All types of information exchange were reported.

The Telemedicine Working Group identified information about the current status of telehealth systems in the State of Missouri:

1. **University of Missouri - Missouri Telehealth Network (MTN)**
   Coverage Area: 101 sites in 39 counties
   Program Established: 1994
   Types of Telehealth
   Clinical Specialties:
   Telepsychiatry (adult and pediatric), Teledermatology (adult and pediatric), Autism, Genetics, Neurology, Burn, Pediatric and adolescent specialty, Endocrinology, Internal medicine, Infectious disease, Psychology, Orthopedics, Cardiology, Rheumatology, Neuropsychology, Ethics Consultation
   Home Telehealth and Remote Monitoring: Phelps County Home Healthcare Project, October, 2004. 20 monitors in 7 counties, with in home equipment, serving over 250 patients thus far.
   e-ICU: No
   Teleradiology: 12 rural sites and more than 57,500 reads

Missouri Telehealth Resource Center: Established to provide new members of MTN or other telehealth networks the opportunity to learn about the technological, clinical, educational and administrative aspects of telehealth. A formal training center and curriculum were developed in 2003 and updated periodically. To date, MTN has hosted 6 training conferences and 140 attendees have been trained.

Outcomes: Phelps Regional Home Care (PRHC) in Rolla began using patient monitoring equipment on a daily basis by checking patients' pressure, pulse oxygen saturation rate, weight and sending it to PRHC. This information is stored in a central database at PRHC. Studies have been completed to determine the impact this type of monitoring has on reducing hospital costs associated with unnecessary hospital visits as well as determining the cost savings in nursing time to the home health agency. Patient and staff satisfaction is also being measured. An article is in the process of being written for publication in the *Journal of Rural Health.*

Marshall Habilitation Center (MHC) is a long term residential facility for approximately 400 residents, who are severely and permanently disabled. MHC was added to the network to reduce the costs associated with transporting patients from MHC to the University of Missouri Healthcare. A briefing paper on the MHC experience was written, outlining the cost savings and reasons for improved patient care. Since the writing of this paper MHC has saved approximately $19,968. This is based on a total of 64 trips that were avoided by using telehealth at $312 per trip.

2. Veteran's Administration Hospitals and Clinics

Coverage Area: 20 sites in all 114 counties in Missouri
Program Established: 1998
Types of Telehealth

Clinical Specialties:
Telepsychiatry, Nutrition, Teleretinal screening, Pain, Speech, Social work,
Heart failure, Smoking Cessation, Pharmacy, Teledermatology, Diabetic Education
Home Telehealth: yes, over 700 patients enrolled, in-home proactive monitoring process for chronic diseases such as COPD, DM, HTN, CHF and Major Depression
e-ICU: No
Teleradiology: 25,000 reads approximated for FY07

3. Oxford HealthCare

Coverage Area: 26 counties in southwest Missouri
Program Established: 2002
Types of Telehealth

Clinical Specialties
Home Telehealth and Remote Monitoring: home monitoring systems that check vital signs, approx 5,000 patients
e-ICU: No
Teleradiology: No
Outcomes: A study for the Medicaid population included 311 clients. The result was 63% fewer emergent care visits (625 versus 244), 49% fewer hospitalizations (616 versus 310), and a reduction of hospitalization days of 63% (5384 versus 2001). Hospitalizations and the number of hospitalizations while on a telemonitor include hospitalization for any reason, even if unrelated to the diagnosis for which the client is being monitored. This type of reduction in resource utilization generated a very significant savings to the state while improving the quality of life of the client.

4. Saint Luke's Healthcare

Coverage Area: Kansas City metropolitan area & surrounding region
Communities served: Trenton, MO; Chillicothe, MO; Lee's Summit, MO;
Program established: 1996
Types of Telehealth

Clinical Specialties:
Telecardiology, Telepulmonology, Telepharmacy, Mental health screenings
Home Telehealth: No
e-ICU: Yes. Vital signs, medications, blood test results, X-rays, and other information from bedside monitors are sent to Saint Luke's *e* ICU facility by private, high-speed data lines. The e-ICU averages a daily census of 66 monitored patients in 78 available monitored beds.
Teleradiology: Yes

5. **NightHawk Radiology Services (example of external provider penetration)**
   Coverage Area: 9 counties in Missouri, 1 hospital ICU
   Program established: 2006
   Types of Telehealth
   Clinical Specialties: Radiology
   Home Telehealth: No
   e-ICU: No
   Teleradiology: Diagnostic radiology services in either preliminary or final reports is offered 24 hours a day.

6. **New/Other Programs**
   Access Springfield - Home Telehealth and Remote Monitoring
   Homemaker - Home Telehealth and Remote Monitoring, Jefferson City
   Advanced ICU - eICU, St. Louis
   Barnes-Jewish Hospital – Home Telehealth and Remote Monitoring
   John Knox Village, Kansas City – Home Telehealth and Remote Monitoring
   Visiting Nurses Association, Kansas City
   Saint Luke's Healthcare, Kansas City – Teledermatology and wound care
   Cardinal Health Rxe-source – telepharmacy, operating in several counties

Appendix E provides the service maps to illustrate the telemedicine service areas.

Presentations

The Healthcare Information Technology Task Force received a number of presentations that provided great insight into the current status of healthcare information technology activities within the state. Many of the initiatives are in early states, but are hoping to achieve the same goals. Each of these initiatives underlines the importance of a clearly defined organization or group to coordinate activity across the state and ensure that resources are used in the most efficient manner.

At the Healthcare Information Technology Task Force meeting on May 24, 2006, the Task Force members heard presentations from Joe Pather of Browsersoft, Denni McColm of Citizens Memorial Healthcare in Boliver, Missouri, and Dr. Karen Edison of University of Missouri Health Care.

Browsersoft is based in Lenexa, Kansas, and provides open-source Health Information Exchange software and consulting services. Currently, Browsersoft is working to develop prototypes for the Nationwide Health Information Network through a contract with the United States Department of Health and Human Services.

The presentation from Browsersoft focused on Connecting for Health, a non-profit organization founded and supported by the Markle Foundation, with additional support from Robert Wood Johnson Foundation. Connecting for Health aims "To catalyze changes on a national basis to create an interconnected, electronic health information infrastructure to support better health and healthcare".

Connecting for Health focuses on three primary areas: Technology standards and adoption, Policy

framework for successful implementation, and the role of the consumer. Connecting for Health is working to develop policy and technical frameworks for information sharing. This includes identifying information that needs to be shared, as well as what does not, and developing documentation to help facilitate the sharing of information by communities.

Citizens Memorial Healthcare consists of two corporate entities and independent physicians serving 5+ counties in southwest Missouri. Citizens Memorial Healthcare employs 1,550 staff and is the sole community provider.

Ms. McColm's presentation focused on Project Infocare, which provided one Electronic Medical Record (EMR) that is patient-centered, integrated, and available to physicians anywhere via remote access. This EMR contains all visits from across the continuum of care and has allowed Citizens Memorial Healthcare to cease use of paper charts. Currently, all physicians are using Computerized Physician Order Entry for prescriptions. Project InfoCare began in December of 2001, and was completed in December of 2005. Project InfoCare was funded by a $1.5 million grant from the Agency for Healthcare Research and Quality.

Dr. Karen Edison provided an overview of Telehealth, as well as its current use within the State of Missouri. Dr. Edison described Telehealth as "The use of electronic information and telecommunications technologies to support long-distance clinical healthcare, patient and professional health-related education, public health and administration." Currently, the Missouri Telehealth Network provides services to over 2,000 patients per year. The primary patients served by telemedicine live in rural areas. With nearly one-third of Missouri's population in rural areas, the need for cost-effective ways to deliver care to these areas is clear.

Dr. Edison highlighted projects that have been successful in delivering cost-effective care. For example, in Rolla, Missouri, a home telehealth monitoring project resulted in 20% fewer hospitalizations compared to the group not being monitored. This resulted in an average cost savings of $2250 per patient receiving tele-homecare services in a 6-month period.

On June 29, 2006, the Task Force heard presentations from Dr. John Seidenfeld of Wellpoint, Jay Linney of Cerner, and Mary Elizabeth Grimes of BJC Healthcare.

Dr. Seidenfeld presented information on The Claims Record for Emergency Department Pilot Project. This project provides a lightweight electronic medical record for emergency departments that is built from prior insurance claims. When a patient arrives at the emergency department, hospital staff have the ability to view the patient's records online, through a portal provided by Blue Cross Blue Shield of Missouri. There is no cost to the facility, use does not affect reimbursement, and use is optional. This particular project is in the St. Louis area but Blue Cross Blue Shield is in various stages of implementing this program across the county.

All information is securely stored and transmitted. Records include: Pharmacy, Admissions, Procedures, and Diagnoses. Information is even available on previous Blue Cross Blue Shield of Missouri members, with a signed consent form. The Claims Record for Emergency Department Pilot Project began in January of 2006 and is still underway.

Mr. Linney provided an overview of the work being done by Health*e* Mid-America, an organization formed by Cerner with the intent to create a Community Health Record. The vision of Health*e* Mid-America is that the community health record will act as a stepping stone to a full electronic health record and will tie into the national infrastructure being developed.

Health*e* Mid-America is in the process of recruiting additional sponsoring organizations and preparing the systems necessary for operation. Currently, Healthe Mid-America will be funded through payments from employers to store health data for their employees. The expected benefits to employers are lower healthcare costs and more efficient employees due to better overall health.

The final presentation for June 29, 2006, was from Mary Elizabeth Grimes with BJC Healthcare, who provided a demonstration of myhealthfolders.com, a personal health record that has been created by BJC. MyHealthFolders.com allows users to print off an identification card that contains a unique ID for the

individual, which a healthcare professional can utilize to access the information stored in the system in the case of an emergency. In order to protect the data, the ID on the card expires after one use.

MyHealthFolders.com was created initially for BJC employees. BJC hopes to offer this service to other employers in the future. The goal of MyHealthFolders.com is to encourage individuals to take a more active role in their own healthcare, to reduce the cost of healthcare, and to improve the health of the community.

The August 17th Task Force meeting included presentations from John Wade of Kansas City Regional Electronic Exchange (KCREE), Robert Fruend of St. Louis Regional Health Commission and Brooke Sehy of Saint Louis Integrated Health Network, and Steve Schwarm of Polsinelli Shalton Welte Suelthaous, PC.

KCREE is a non-profit organization whose goal is to "support the exchange of secure health information across the Kansas City region at an affordable cost to all." KCREE plans to lower the cost of healthcare by providing electronic exchanges of administrative data, such as eligibility and payment information. Currently, Saint Luke's Health System, Commerce Bank, and Blue Cross Blue Shield have partnered to develop KCREE.

Currently, each provider or payor member connects directly to other providers, payors, or clearing houses to submit transactions to each other. KCREE plans to act as a centralized service provider that will broker data exchanges. The current approach is based on work done by the New England Health Exchange Network (NEHEN). By following this model, KCREE believes a reduction of over $7 million can be achieved in a three-year period in claims processing alone in the Kansas City Region. Cerner and KCREE are in discussions about collaboration opportunities.

Mr. Fruend and Ms. Sehy presented information to the task force on the Primary Care Home Initiative: St. Louis Health Information Exchange project. This project is aimed at improving the healthcare safety net in the St. Louis area. Additionally, this initiative aims to strengthen wellness and health literacy, both of which should result in lower healthcare costs, improved quality of life, and greater regional competitiveness.

Currently, the Integrated Health Network is focusing on improving access to a primary care home for all individuals, improving access to specialty care, improving health information exchange, and strengthening care quality and health literacy. To reach these goals, the Integrated Health Network is in the beginning stages of developing a Network Master Patient Index (NMPI) to include emergency departments in areas of high need. The NMPI will provide the ability to track patients as they move between facilities and will serve as a resource to assign a primary care home to patients, which provides the ability to educate patients about their care options.

The final presentation was delivered by Steve Schwarm of Polsinelli Shalton Welte Suelthaous, PC. Mr. Schwarm spoke to the task force about HIPAA and how it relates to information technology privacy and security. The task force members were primarily interested in how information could be exchanged between Regional Health Information Organizations and Health Information Exchanges. Throughout the presentation there were a number of questions from the task force relating to what information could and could not be shared and under what circumstances. HIPAA provides guidance for administrative and technical guidelines and procedures that must be in place when dealing with protected health information.

Healthcare Information Technology Challenges

Consensus has emerged within federal, public, and private sectors that healthcare information technology and healthcare information exchange can improve the quality and safety of healthcare and stem or reduce rising costs. Proper implementation is essential to achieve these measurable goals. There are many diverse stakeholder opinions about the vision, goals, and strategies. State and local governments must play an important role to collaborate and develop consensus among these stakeholders.

There are barriers that must be addressed in more detail when considering a statewide health information exchange initiative:

1. Adoption - Slow adoption of compatible technology by healthcare constituents. Reasons for this include the lack of standardization, lack of interoperability, costs.
2. Fragmented data - the adoption of technology is one step forward, but the fact remains that medical data is highly fragmented, exists in numerous locations and types of media, when it can be found.
3. Privacy concerns - how will the data be protected? What additional concerns might be raised by privacy advocacy groups? Should the system be an opt-in or opt-out approach?
4. Interoperability - the lack of standards in transactions, communications, and data content
5. Financial sustainability - who will pay? Who gets the most value from this? Studies show providers benefit the least, while patients, plans and employers benefit the most. How will providers, for example, pay for an electronic health record system?
6. Health system reimbursement model – currently supports volume, not quality.
7. Public awareness - it is critical that the public is aware and engaged in these very important initiatives. What should they expect from such initiatives? What do they gain, why should they care, what is their role?
8. Governance - what structure will be used to govern the initiatives?
9. Involvement of vendors, particularly small system vendors - These vendors are critical to the success of many HIT projects. In so many cases, they are unaware of national and state issues, nor in a position to support them.
10. Competing initiatives may divert resources, attention and/or change scope; e.g. National Provider Identifier, High Deductible Health Plans. How will this be managed?
11. HIPAA - how does HIPAA impact healthcare technology? Who is a cover entity? What transactions are covered?
12. Competition and lack of trust among healthcare constituents - This is a lesson learned from the Community Health Information Networks (CHIN) of the 90's.

A variety of issues influence healthcare information technology practices. Those include:

- Laws differ from state-to-state regarding the release of medical record information, complicating the acquisition of data from other states and the business rules for standardizing health record data elements. Federal laws for release and exchange of electronic healthcare records, (e.g. HIPAA), can be trumped by existing state laws.
- Electronic healthcare records may be difficult for small entities to implement due to a lack of knowledge and funds for technology expenditures.
- Many standards already exist such as the Uniform Billing Standards and the HIPAA data transaction record standards, and the Systemized Nomenclature of Medicine Clinical Terms (SNOMED CT). Several electronic healthcare data standards are in the development stage by both government and private entities.
- The challenges for shared electronic healthcare records are not related to technology issues, but rather organizational and policy issues.
- Ideally, there will be a need for a unique patient identification number so that multiple records from multiple locations can be verified as belonging to the same patient. In the absence of a singular identifier, several different types of patient identifiers may be needed for probabilistic matching.
- Some states are already sharing patient prescription data across health providers, practitioners and health plans. However, a complete record of prescriptions is challenging because patients may not give each provider the same information. Also, drug samples are often provided to the patient without documentation of a pharmacy record.
- Electronic healthcare records may be difficult for small entities to implement due to a lack of knowledge and funds for technology expenditures.
- Buy-in can be difficult because of conflicting missions and poorly conceived objectives.
- Lack of clear ownership over data systems and information and a perceived loss of control.
- Citizens must be able to access their personal health information.
- Understanding the role of HIPAA is critical to the sharing of electronic healthcare records across multiple entities.
- It is common for information technology projects to require institutional review board (IRB) reviews. Obtaining approval from these boards will be critical.

Cost

The costs involved in exchanging health information vary widely depending upon the architectural model chosen. Additionally, the full costs are shared among all organizations involved in the exchange. Each participating facility must have three basic components: an electronic medical record system, the hardware to support such system, and a network capable of transmitting information back to other members of the exchange. The exchange itself also has costs involved in developing and maintaining the system. The main components of cost for the exchange are:

- Operational Costs of the Entity – This area includes salaries and benefits for staff, office space, and other general operating costs.
- Legal Fees – This includes the cost of creating and managing agreements with each entity involved in the exchange to facilitate access to their data.
- Hardware and Network – All of the required servers, routers, switches, and other network hardware required to provide a reliable, secure network and data center for patient data to travel across between participating entities.
- Software – Software is likely the most costly element. This cost item contains a few key components that are critical to success:

    - Authentication & Authorization Services – This service provides the ability to make sure the user requesting the data does have access to the system, and also verifies the user has the proper permissions to view the data they are requesting.
    - Record Locator Service – Provides a centralized point within the exchange for participating entities to request patient data. This is the system that communicates with each participating entity to request information on John Doe, and also verifies that John Doe at facility A is the same John Doe as the one found in facility B.
    - Record Aggregation Service – Accepts records found from the Record Locator Service and compiles them into one record to be delivered back to the intial requesting entity.
    - Record Display – Participating entities may choose to view the requested record on a web portal provided by the exchange, or may choose to import the record into their existing electronic medical record. However, the exchange must provide some level of web portal for record request and display.

Resources Necessary to Achieve Healthcare Information Technology

The Resources Working Group made four assumptions about the system. These include:

- Health Information Exchange (HIE) involves the exchange of electronic data among medical practitioners and providers, insurers, employers, consumers, public health officials, state and local government, and others that may be granted access to health data.
- Health Information Technology (HIT) applies to the acquisition of necessary electronic technology to enable HIE on a widespread basis, including all patient medical and financial information.
- Efforts in Missouri are already underway on both fronts. The funding question assumes a goal of coordinated statewide approach in some manner. The nature of the approach and level of centralized authority are undecided.
- The HIE system, if statewide, will require some centralized direction.

The Resources Working group identified and evaluated potential sources of funding or financing a system (or systems) of interactive information technology connecting healthcare stakeholders throughout the state.

Funding Environment - Significant interest exists nationally in the subject and efforts are underway in HIT/HIE in virtually every state. Several states have developed a plan and are in various stages of execution. The experiences thus far indicate two funding concerns for HIE: startup and ongoing development/maintenance.

Major granting agencies, such as Agency for Healthcare Research and Quality are involved in a variety of startup projects. These can be supplemented by contributions from private industry, such as employers and insurers, and funding from state government. Outside resources do not appear to be available for ongoing HIE operations.

Funding Approach - Funding approaches undertaken by other states range from direct government funding to use of fees and combinations of both. The route to funding necessarily will involve the establishment of an organization whose mission is to pursue development of HIE:

- Studies suggest many organizations founder on lack of ongoing funding, so this approach is important.
- The organization should broadly represent a wide variety of public and private stakeholders. All healthcare stakeholders should be represented.
- The degree of centralized authority and function should be decided after further study. Minimally, the organization would be responsible for statewide planning, coordination of regional/local efforts, technical standards, public health concerns, privacy issues, etc.
- The organization should be non-profit, as many grants are only available to the non-profit sector. It could also have legislative authority to protect the public interest, such as a public utility model.

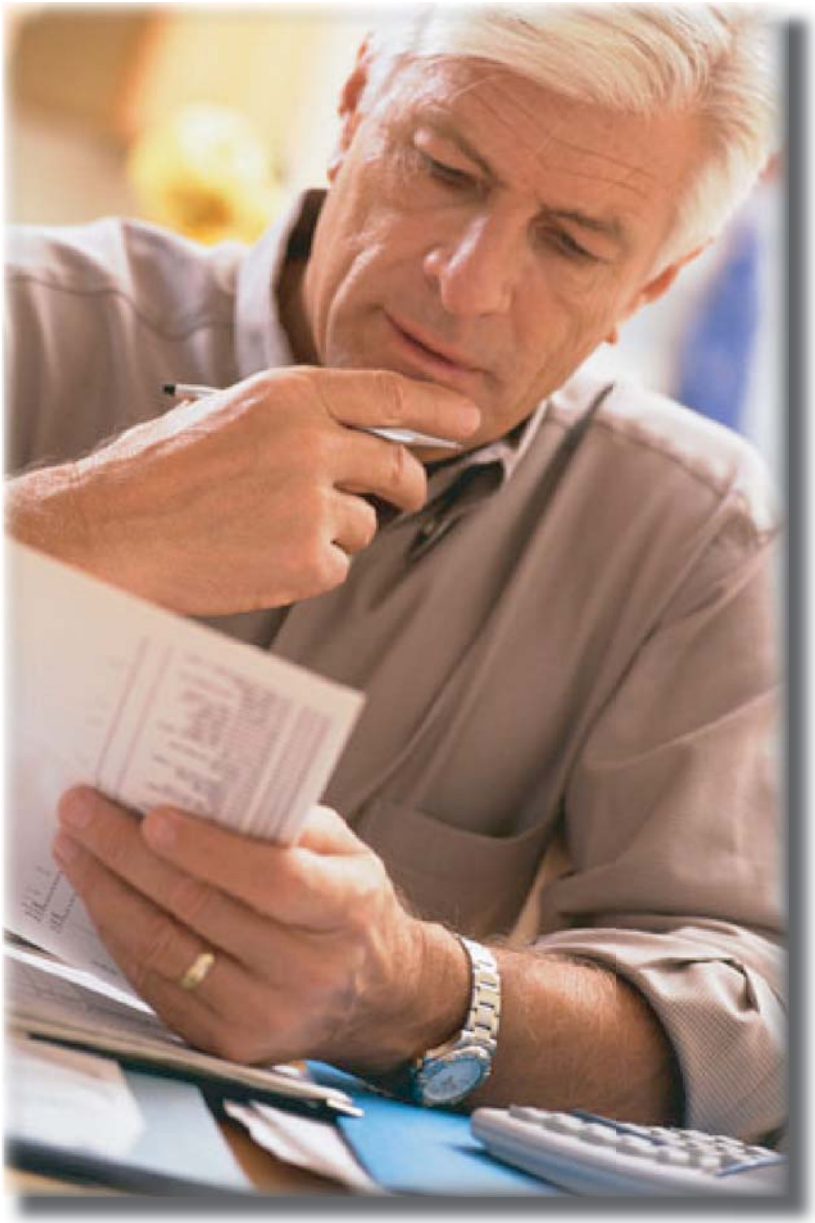
Startup Activities - The establishment of this organization is to guide the most cost-effective HIE/HIT implementation possible. It is not necessary to invest large amounts of capital in a "top-down" approach.

- Studies elsewhere indicate that system infrastructure could cost approximately $2.50 per capita in a 24-month period for a decentralized model (often called a Master Patient Index). The data warehouse (or centralized) model would be more expensive.
- Options to fund this would include those mentioned in "Funding Environment" above. Additionally, the state could fund this development and then lease the operation back to the HIE Authority.

Ongoing Operations - An essential ingredient in the success of HIE is the funding of the activities on an ongoing basis. Here the role of the central authority is crucial in setting appropriate financial policies and protecting the public interest. Many models favor the

use of user fees (funded by presumed savings) and/or subscriptions, although some states have efforts that are tax supported. Some evolving organizations deposit funding through capitalizing on the market value of the data.

The fee method would involve a transaction charge levied upon users. Methods for tracking and billing would be implicit in system design. A subscription model would impose an annual fee on all users and usage could be unlimited. Access fees could be added for those entities that would be allowed "read-only" authorization, such as personal health records, disease management entities, etc.



Studies elsewhere indicate this system should be manageable for approximately $3.50 per capita on an ongoing basis. Tax support is not requested.

The above applies to HIE. Organizations advancing HIT internally to enable participation are responsible for their own HIT costs. Most observers suggest physicians cannot be expected to fully fund the cost of HIT.

The establishment of an HIE system can be achieved for a modest cost if the proper organization and planning are in place. This cost is likely fundable from a variety of different sources. Ongoing operations must be paid for by users in some way as the only sustainable model. In that respect the interests of consumers must be protected by an entity with the authority to do so.

Telemedicine/Telehealth Working Group

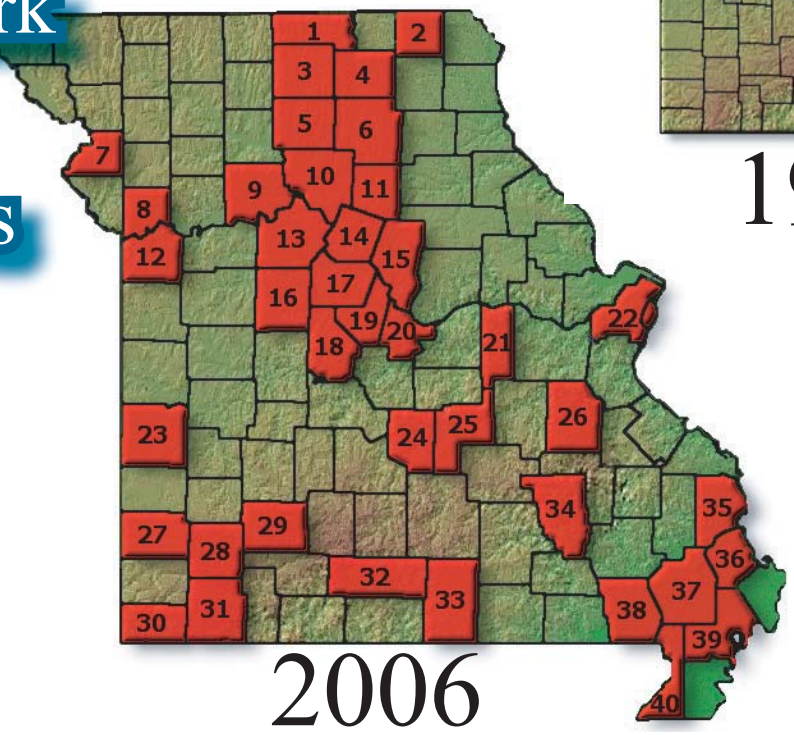
According to the American Telemedicine Association, telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patients' health status. Closely associated with telemedicine is the term "telehealth," which is often used to encompass a broader definition of remote healthcare that does not always involve clinical services. Videoconferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education and nursing call centers are all considered part of telemedicine and telehealth.

Given the scope of our charge included in the Governor's Executive Order, the Telemedicine Working Group focused primarily on the clinical service delivery applications of telemedicine and investigated ways that telemedicine can increase access to healthcare for Missourians.

Telemedicine and Healthcare Information Technology are complementary and synergistic. Telemedicine is a method of healthcare that uses health information technologies to accomplish its goals. Telemedicine is working today to provide value for Missouri's citizens. Telemedicine systems are discussed in the current status and best practices section of this report.

Telehealth Network Sites

1995



2006

1. **Putnam County**
   Putnam County Memorial Hospital, Unionville
2. **Scotland County**
   Scotland County Memorial Hospital, Memphis
3. **Sullivan County**
   Sullivan County Memorial Hospital, Milan
4. **Adair County**
   A.T. Still University, Kirksville
   Mark Twain Counseling Center, Kirksville
   Preferred Family Healthcare, Kirksville
   Northeast Missouri Health Council, Kirksville
5. **Linn County**
   Pershing Memorial Hospital, Brookfield
6. **Macon County**
   Loch Haven Nursing Home, Macon
   Samaritan Memorial Hospital, Macon
7. **Buchanan County**
   Northwest Health Services, Inc., St. Joseph
   Heartland Health System, St. Joseph
8. **Clay County**
   Liberty Hospital, Liberty
   North Kansas City Hospital, Kansas City
9. **Carroll County**
   Carroll County Behavioral Health Services, Carrollton
10. **Chariton County**
    Family Health Center, Salisbury
11. **Randolph County**
    Randolph County Behavioral Health Services, Moberly
12. **Jackson County**
    Children's Mercy Hospital, Kansas City
    Truman Medical Center Hospital Hill, Kansas City
    Swope Health Services, Kansas City
    Samuel U Rodgers Community Health Center, Kansas City
    St. Luke's Hospital of Kansas City, Kansas City
    Research Medical Center, Kansas City
    Independence Regional Health Center, Independence
13. **Saline County**
    Saline County Behavioral Health Services, Marshall
    Marshall Habilitation Center, Marshall
14. **Howard County**
    Fayette Medical Clinic, Fayette (Teleradiology only)

15. **Boone County**
University of Missouri Health Care, Columbia
Ellis Fishel Cancer Center, Columbia
University Physicians Clinics, Columbia
Parkade Center Behavioral Health Services, Columbia
Rusk Rehabilitation Hospital, Columbia
Columbia Regional Hospital, Columbia
MU School of Medicine, Columbia
MU Sinclair School of Nursing, Columbia
Woodrail Centre, Columbia
Family Health Center, Columbia

16. **Pettis County**
Pettis County Behavioral Health Services, Sedalia

17. **Cooper County**
Cooper County Memorial Hospital, Boonville (Telera diology only)

18. **Morgan County**
Morgan County Behavioral Health Services, Versailles

19. **Moniteau County**
Moniteau County Behavioral Health Services, California

20. **Cole County**
Department of Health & Senior Services, Jefferson City
Missouri Primary Care Association, Jefferson City
Missouri Hospital Association, Jefferson City

21. **Gasconade County**
Hermann Area District Hospital, Hermann

22. **St. Louis County**
St. Louis Children's Hospital, St. Louis
SSM Cardinal Glennon Children's Hospital, St. Louis
St. Louis University Hospital, St. Louis
SSM St. Joseph Hospital of Kirkwood, St. Louis
St. Anthony's Medical Center, St. Louis
St. John's Mercy Medical Center, St. Louis
Family Care Health Centers, St. Louis
Myrtle Hilliard Davis Comprehensive Health Center, St. Louis
Grace Hill Neighborhood Health Centers, St. Louis
People's Health Centers, Inc., St. Louis

23. **Vernon County**
Nevada Regional Medical Center, Nevada

24. Pulaski County
General Leonard Wood Army Community Hospital, Ft. Leonard Wood
Central Ozark Medical Center, Richland

25. **Phelps County**
Phelps County Regional Medical Center, Rolla
Phelps Regional Home Care, Rolla

26. **Washington County**
Great Mines Health Center, Potosi

27. **Jasper County**
St. John's Regional Medical Center, Joplin

28. **Lawrence County**
Missouri Rehabilitation Center, Mt. Vernon
Clark Community Mental Health Center, Aurora

29. **Greene County**
Jordan Valley Community Health Center, Springfield
Cox Medical Center South, Springfield
St. John's Regional Health Center, Springfield

30. **McDonald County**
Ozark Tri-County Health Care Consortium, Anderson

31. **Barry County**
Clark Community Mental Health Center, Monett
St. John's Urgent Care Clinic, Monett

32. **Douglas County**
Missouri Ozarks Community Health, Ava

33. **Howell County**
Southern Missouri Community Health Center, West Plains

34. **Reynolds County**
Big Springs Medical Association, Ellington

35. **Cape Girardeau County**
Cross Trails Medical Center, Cape Girardeau

36. **Scott County**
Sikeston Family Clinic, Sikeston
Missouri Delta Medical Center, Sikeston

37. **Stoddard County**
Bernie Family Clinic, Bernie

38. **Butler County**
Poplar Bluff Regional Medical Center, Poplar Bluff

39. **New Madrid County**
New Madrid Family Clinic, New Madrid
Portageville Family Clinic, Portageville

40. **Dunklin County**
Kennett Family Clinic & Migrant Services, Kennett

Best Practices Working Group

In conducting research in the best practices area of Health Information Technology (HIT), it quickly becomes apparent there are many initiatives, standards, and business models already underway in both the public and private sector. Collectively, there does not appear to be a one-size-fits-all approach to HIT, but rather a distributed one allowing for flexibility at the local level. Many initiatives exist that leverage partnerships for data sharing among specific geographic areas.

Government plays a role in bringing together stakeholders to create and promote the adoption of policies and standards. With Missouri state government as one of the state's largest employers and the state's Medicaid system containing medical information on Missouri citizens, state government can serve as a leader to facilitate the adoption of electronic healthcare record formats and data standards that promote interoperability.

In researching various HIT initiatives for the Best Practices Working Group, many ideas and approaches were discussed. It is anticipated the work of the Missouri Healthcare Information Technology Task Force and associated working groups is just the initial step in the formation of a future task force or steering committee. The information contained herein becomes the starting point toward building a foundation for Missouri healthcare information technology. Upon exploration of best practices, the working group identified the following examples:

Best Practice Examples

- Kansas Health Information Technology / Health Information Exchange Policy Initiative, Summary Roadmap – Final Report, April 2006
- Arizona e-Health Connection Roadmap – April 2006. One of the key objectives is to establish a not-for-profit public/private partnership to implement the road map.[6]
- Massachusetts Health Data Consortium – this website provides information regarding Massachusetts' regional collaborative initiative for the sharing of electronic healthcare records.[7]
- *RHIO Best Practice Study*
  The Foundation of Research and Education of the American Health Information Management Association received an award and six-month contract in March 2006 for an HHS-sponsored project to identify best practices for state-level RHIOs. The project includes researching the RHIO's governance, structure, financing and data exchange policies and developing a framework to describe those practices. The states chosen who already have an established public/private organization operating are California, Colorado, Florida, Indiana, Maine, Massachusetts, Rhode Island, Tennessee and Utah.[8]
- *A Practical Approach to RHIO Formation*
  This paper examines the most critical issues of RHIO formation and raises problems not commonly cited, including the main technological challenges faced during implementation. It also explains how using a federated, flexible solution can help overcome, or even avoid, these problems.[9]
- *Ending the Document Game*
  This report, created by the Commission on Systemic Interoperability, focuses on three major themes (adoption, interoperability, and connectivity) and fourteen recommendations. The report uses the example of an interoperable medication record for all Americans by 2010 to focus on a specific, achievable, high-value goal.[10]
- *eHealth Initiative's Connecting Communities Toolkit*
  The eHealth Initiative is a non-profit organization focused on engaging multiple stakeholders to define and implement specific actions that will address quality, safety, and efficiency of our healthcare system through the use of interoperable information technology. The initiative offers a toolkit to assist in addressing the organizational and legal issues associated with the governance and implementation of a business structure for the sharing of electronic healthcare records.[11]
- *Strategies for Creating Successful Local Health Information Infrastructure Initiatives*
  This report profiles real life examples of Community Health Information Networks (CHINs); the Indianapolis Network for Patient Care and the Santa Barbara County Care Data Exchange. The report addresses the attributes leading to their success and the challenges faced by these organizations.[12]

- *Connecting for Health Data Exchange Framework*
  Connecting for Health, a public-private collaborative led by the Markle Foundation, released in April 2006 its Common Framework for the policy and technical components needed for healthcare information exchange. The framework includes 16 technical and policy components that organizations can use to help create a system for data exchange.[13]
- The *Healthcare Information Technology Standards Panel (HITSP)* has identified for the U.S. Department of Health and Human Services an initial set of standards to facilitate the secure exchange of patient data in a new nationwide health information network (NHIN). President George W. Bush called for development of the NHIN by 2014.[14]
- The Healthcare Information and Management Systems Society provides the *CPRI Toolkit* that outlines general principles as well as best practices and examples of how healthcare providers should manage privacy and security.[15]
- RTI International, awarded a contract from the U.S. Department of Health and Human Services, works with the Office of the National Coordinator for Health Information Technology (ONC) and the Agency for Healthcare Research and Quality (AHRQ) to identify best practices and develop solutions to overcome variances in laws and business practices that prevent the nationwide sharing of electronic health information.[16]

The Telemedicine Working Group also discovered many best practices in other states:

1. California Telehealth & Telemedicine Center (resource center)[17]

   The origins of the California Telehealth & Telemedicine Centers (CTTC) date back to 1995. In that year, a group of statewide TH/TM leaders came together as one of the recommendations was to establish a statewide resource to facilitate the adoption of Telemedicine and Telehealth in California. Since the California Telehealth & Telemedicine Center opened in July 1997, it has facilitated the growth of telehealth and telemedicine in California by:

   - assisting in the development of collaborative telehealth and telemedicine projects;
   - educating healthcare providers and government officials;
   - monitoring telemedicine legislation and public policy;
   - expanding funding for telehealth and telemedicine;
   - maintaining a website and serving as an information resource;
   - collaborating with public agencies, service organizations and trade associations;
   - disseminating information to local, state and national media.

2. TeleKidcare - Kansas University Medical Center (care in schools)[18]

   In February 1998, KUMC joined with a local urban school district, USD 500, to establish TeleKidcare® providing timely healthcare to the students at four elementary schools. Since that time, with funding support from local and federal agencies, the project has grown to include elementary, middle, and high schools.

   Typical services include diagnosing and treating acute healthcare concerns; consulting and education regarding management of chronic healthcare conditions; assessing, treating, and managing ADHD; and assessing childhood and adolescent depression and providing treatment/therapy.

   After several years in operation, research shows that 47% of consults have been for ear, nose, and throat concerns; 31% of consults for behavioral health issues; 10% of consults for eye-related

complaints; 9% for respiratory ailments and 3% for a variety of miscellaneous diseases.

3. ANGELS Program in Arkansas (high-risk pregnancies and neonatal care)[19]

   The Antenatal and Neonatal Guidelines, Education and Learning System (ANGELS) is the only known program of its kind in the nation. ANGELS is a collaboration between the University of Arkansas for Medical Sciences (UAMS), Arkansas Medicaid, Arkansas Medical Society, and Arkansas' physicians and patients. ANGELS' mission is to reach throughout Arkansas to pregnant women and infants in need of special care. ANGELS seeks to facilitate statewide adoption of evidence-based guidelines and regionalize and equalize obstetric care throughout Arkansas so that the most rural regions of the state have ready access to the same high-quality medicine found at major medical centers.

   By making innovative use of telemedicine, ANGELS provides expansive support and continuing education for local obstetricians and family medicine practitioners and support for pregnant patients all over Arkansas. ANGELS has developed a clinical telemedicine system that includes 20 fully equipped community sites, with 40 additional sites equipped for medical consultations and patient education. ANGELS provides rural hospitals with needed telemedicine equipment including a real-time video conferencing unit designed for use in examining rooms, surgical settings, and emergency departments; a high-performance portable ultrasound device; and an ultrasound storage system that allows rural obstetrical providers and the ANGELS team to retrieve images later for further evaluation and follow-up care.

4. University of Texas Medical Branch Telehealth Center (correctional care)[20]

   UTMB has been a leader in telehealth since 1994. Since that time, 34 medical specialists and ancillary services have conducted more than 50,000 patient visits using videoconferencing. Concurrently, the Department of Radiology has converted almost entirely to a digital store and forward system. Over the same period, more than 350 students have graduated from programs offered through distance education at UTMB, and some 200 students are currently enrolled in distance education courses. By mid-2003, UTMB's videoconferencing network consisted of 49 on-campus sites with 98 sites across Texas for distance education and telehealth.

   Physicians and administrators for the Texas state prison system initially began the Correctional Managed Care program in 1994 to deliver cost-effective care to Texas prisons. At this time, 75 percent of telemedicine visits serve prison inmates, with the remaining 25 percent assisting non-correctional visits. In October 2004, correctional care visits for the month were 3,653.

5. Lehigh Valley Hospital and Health Network Advanced ICU- Pennsylvania[21]

   The Lehigh Valley Hospital and Health Network is one of the largest and oldest licensed teaching hospitals in Pennsylvania. It consists of a three hospital network, two of which include intensive care units. Lehigh Valley Hospital - Cedar Crest (LVHCC) has 680 beds with a Level I trauma program, Medical, Surgical, Cardiac, CT Surgery and Neurosurgical ICUs. Lehigh Valley Hospital - Muhlenberg (LVHM) has 180 beds with 20 ICU beds including a small Open Heart program.

   Lehigh Valley Hospital and Health Network has developed a sophisticated tele-intensive care program designed to track and analyze complex sets of clinical data to assess and address each patient's specific needs. Intensivist led Leapfrog-compliant critical care programs were fully developed during daytime hours at both sites prior to the implementation of the Tele-intensivist program.

   Clinical outcomes have been documented and demonstrate a 5% absolute mortality reduction (16% to 11%) in all patients admitted to the ICU with a 10% reduction (15% to 5%) in patients with moderate severity of illness. Since implementation of the EMR, efficiency of nursing time has been increased by 1 hour per nurse per shift with greater attention to direct patient care. Computer order entry has reduced time from order entry to administration of drug by nearly one hour.

6. North Dakota Telepharmacy Program[22]

   With telepharmacy, a licensed pharmacist is able to supervise a registered pharmacy technician in dispensing medications and provide pharmacist consultation to patients at a remote site up to 50 miles away. Telepharmacy sites are up and running in the North Dakota cities of Beach, New England, and Rolette. Gwinner and New Town will be added to the list in the near future.

   Telelpharmacy uses state-of-the-art technology allowing a licensed pharmacist at a central location to supervise a pharmacy technician in the dispensing of pharmaceuticals at a remote site through audio and video computer links. Pharmacies are allowed to use pharmacy technicians to assist in the process of filling prescriptions as long as a licensed pharmacist directly supervises them.

   The pharmacist reviews the patient's medication profile for drug interactions and other potential problems before examining digital pictures of the completed prescription for accuracy via video conferencing equipment. Once the pharmacist has approved the prepared prescription, the pharmacy technician brings the patient to a private consultation room for counseling by the pharmacist on the proper use of their medication. Patient education counseling is required by the North Dakota Board of Pharmacy for all patients receiving telepharmacy services and also takes place via video conferencing.

   As of January 2006, fifty-seven pharmacies are involved in the North Dakota Telepharmacy Project, twenty-one central pharmacy sites and thirty-six remote telepharmacy sites. Of the fifty-seven pharmacies involved, forty-four are retail pharmacies and thirteen are hospital pharmacies. Thirty-three (62%) of North Dakota's fifty-three counties are involved in the project and two in Minnesota. Approximately 40,000 rural citizens have had pharmacy services restored, retained or established through the North Dakota Telepharmacy Project since its inception. The project has restored valuable access to healthcare in remote medically underserved areas of the state and has added approximately $12 million in economic development to the local rural economy.

7. PROACT in Kentucky (bioterrorism and emergency preparedness)[23]

   In the aftermath of a natural or man-made disaster, the PROACT videoconference network will bring Public Health, medical and other experts from anywhere in the country to the site of a disaster through the use of an existing interactive videoconference technology. This initiative supplements all other disaster preparedness and response efforts and outlines the simple steps needed to launch the program.

   The PROACT Network
   The Preparedness & Response On Advanced Communication Technology (PROACT) network is the interactive videoconference network that links Public Health officials, community healthcare facilities, regional Bioterrorism Coordinators and all other stakeholders of Kentucky's disaster preparedness and response efforts. Sites commit to participating in programming that:

   1. Bring the regional BT coordinators together on a regular basis.
   2. Deliver disaster preparedness and response educational programming to communities.
   3. Engage communities in the statewide planning and response efforts.
   4. Be able to reach out across state lines to other PROACT-like networks for regional and national disaster response.
   5. Provide a channel to connect victims of disasters with specialists from anywhere in the world, including the CDC in Atlanta.

   Katrina Update
   One recent example of the Kentucky TeleHealth network's ability to distribute educational programming quickly was the "Katrina Update" that reached 42 sites and nearly 400 people with up-to-the-minute information on the healthcare needs of refugees that traveled from the Gulf Coast to Kentucky, as well as the efforts by Kentucky's healthcare professionals to provide supportive services in areas impacted by Hurricane Katrina. The program was conceived on a Friday, by William Hacker, MD, Kentucky's Commissioner of Public Health, and the program took place on the following Wednesday afternoon.

8. Tele-Stroke in Utah[24]

   Utah Telehealth Network has been developed over the last several years. At the request of Governor Leavitt, the 1995 Utah Legislature approved $200,000 one-time funding to support a pilot project for telemedicine. At the same time, the University of Utah Health Sciences Center established the Telemedicine Outreach Program, developed to link the University with its clinic on the Nevada border.

   One of the new services added in 2003 was the Telestroke Program. This joint venture between the University Stroke Center and the Central Valley Medical Center, in Nephi, makes diagnosis and treatment possible to patients within a crucial 3-hour timeframe.

9. The Michigan/Kansas Telehospice Project[25]

   Two large hospices in Michigan and Kansas are engaged in a bi-state telehealth project designed to use telemedicine technology to enhance end-of-life care. Both hospices have a statewide presence, with clients located in urban and rural settings.

   The project is currently investigating issues of cost, access implications, and delivery of telehealth service in both rural and urban settings. The two-year study, currently in its second year, is funded by a grant from the National Telecommunication and Information Administration, Technologies Opportunities Program (TOP), of the U.S. Department of Commerce. In each rural and urban office, nurses, social workers, spiritual care counselors and physicians have access to videophone technology, which operates on regular analog phone lines. With this technology, hospice workers are able to connect with and assess patients through videophones located in their homes.

   Outcomes - This pilot study unearthed potential advantages of transcending geographic distance in rural settings and enhancing provider safety in urban surroundings. Telehealth allowed nurses to visit and treat patients without leaving their home/offices. Doolittle (2000) performed a cost-measurement study tallying expenses of a traditional hospice service versus costs incurred while launching and maintaining a telehealth service over two different study periods. For traditional hospice services the cost per visit was $126 and $141 for the first and second study periods, compared to just $29 for telehealth visits.

   Patient/caregiver interviews resemble provider perceptions in terms of positive perceptions regarding equipment efficacy. Like providers, patients/caregivers perceive the equipment to be safe and effective. However, data from the patient/caregiver interviews revealed stronger enthusiasm regarding telehealthcare than indicated in provider surveys. For example, 33 % of patients revealed that telehealth increased their access to their provider, especially during the night hours or in case of an emergency. Further, caregivers reported an increased level of comfort associated with the equipment, due to the video component of the service as well as ease of use in case of emergencies.

10. Arizona Regional Behavioral Health Authority Telemedicine Network[26]

    The Arizona Regional Behavioral Health Authority Telemedicine Network has been serving rural clients for over 10 years. The Network provides easily accessible psychiatric care to patients in remote areas, allows case management and face-to-face psychiatric consultations without travel, disseminates formal trainings and Continuing Medical Education units to any endpoint on the network, and allows agency and provider staff to meet without leaving their work sites.

    The Authority has 31 endpoints of access in 16 cities and towns covering a geographic area of 62,000 square miles. Clinical services offered include:
    psychiatric evaluations, medication management, inpatient staffing, consultations, emergency and commitment evaluations, Title 36 Commitment hearings, family involvement in patient treatment, other clinical services, Intake assessments by clinical staff, Family team meetings among patients, families, therapists/ case managers, and other agencies such as schools or Child Protective Services involved with the patient's care.

    Since 1995, over 28,000 clinical sessions have been held.

Recommendations for Strategic Action

Health information exchange development has been categorized into six stages of maturity: 1) Recognition 2) Organization 3) Defining Needs 4) Implementation 5) Operational and 6) Expansion.[27]

Missouri recognized the need and began the process in 2005. From January 2006 to September 2006, Missouri has made significant progress with organizational efforts and defining needs but much remains to be done.

On behalf of the task force, the membership submits the following recommendations for consideration:

1. Form a steering committee to continue work beyond the Missouri Healthcare Information Technology Task Force.
   - Leverage the information contained in the final report and the expertise of the task force members for a future task force and related initiatives.
   - The nature of health information technology demands active collaboration from a wide variety of interests. The steering committee should have broad representation including payors, providers, employers, consumers, subject matter experts and government leaders. The steering committee should convene, at minimum, two statewide stakeholder meetings to receive input.
   - The work of the steering committee will include the creation of a board of directors to:
   - Create a private, not-for-profit organization. The not-for-profit status would allow the organization to apply for grants to fund research and pilot projects.
   - The initial board will hire an executive director and staff. The duties of the executive director will include the coordination of healthcare information technology issues and strategic planning.
   - The executive director will be responsible for overseeing the work to:
   - Identify and establish the governance model/project management structure for the State of Missouri.
   - Create a detailed strategic, communication and public education plan to address Missouri's healthcare information technology needs.
   - Validate data obtained in current status working group survey including:
     - An inventory of HIT/HIE capabilities
     - A gap analysis of HIT/HIE capabilities
     - Consideration for other activities planned in Missouri
   - Address identified issues and barriers to statewide healthcare information technology adoption.
   - Create budget and cost data, including exploration of grant funding and partnerships to fund electronic health record implementations.
   - Establish a pilot project or projects that will ensure the implementation and maintenance, as well as the short-term and long-term sustainability of a shared electronic healthcare record system.
   - Provide goal assessment after the pilot model has operated for one year.
   - Encourage provider adoption of electronic healthcare records by exploring incentives.
   - Promote collaboration in public and private partnerships, including identification of physician champions who have experience with successful electronic healthcare record systems to educate the healthcare community. Success will depend upon the acceptance by physicians and healthcare providers.
   - Adopt common definitions, data standards and patient identifiers across government and private industry that will promote interoperability for the sharing of electronic healthcare records.
   - Explore the necessity of legislative changes to implement healthcare information technology in Missouri.

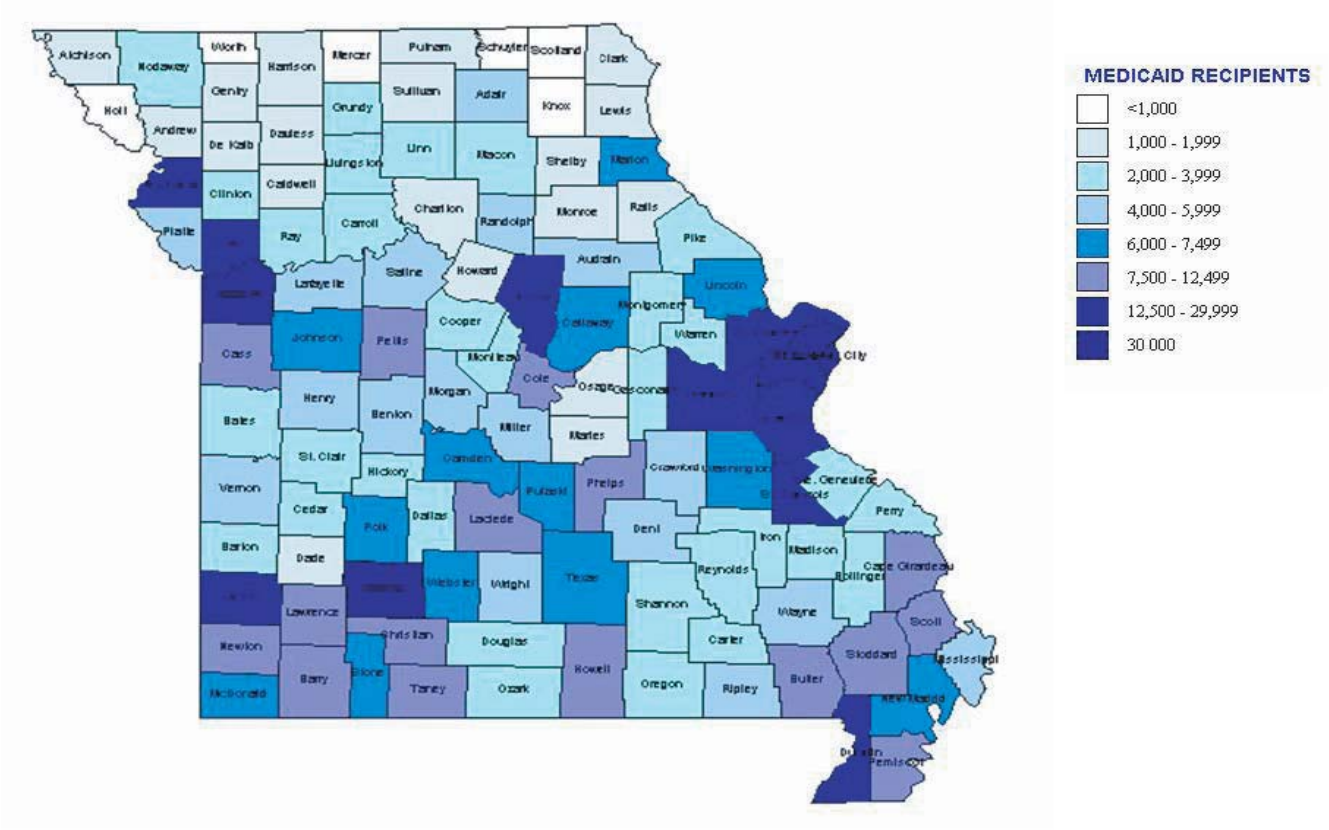
   Appendix F provides the organizational structure for the proposed model.

2. The State of Missouri should mirror the President's August 22, 2006 Executive Order: Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs and require all state agencies and funded organizations to develop a plan to adopt healthcare information technology.

3. As Missouri moves into the 21st century, so must the technology that assists Missourians in receiving health care coverage. We should ensure that the reformed Medicaid system embraces healthcare information technology in a manner that ensures interoperability, increases consumer involvement, reduces cost[28] and provides transparency of quality to position them to be a leader in the healthcare industry. Appendix G provides Telehealth Medicaid Legislative and Regulatory Roles as well as Medicaid State Profiles.

   - Explore the use of telemedicine in the reformed Medicaid system to increase access to care and reduce patient transportation costs for the Medicaid program. Better care and cost saving may be realized with expansion of telemedicine reimbursement.

Total number of Missouri Medicaid Recipients by County, FY 2005



Source: MoDSS Summary Table 5, FY2005. Map produced by the University of Missouri Work Group on Medicaid

4. "Public Health is what we, as a society, do collectively to assure the conditions in which people can be healthy."[29] Public health improvement requires the collection of timely, accurate and detailed information that enables assessment of community health, risk factors, research, and reporting of critical findings back to the public so that informed decisions can be made. Rapid response using reliable data is essential to controlling epidemics.

    - Develop and maintain a statewide bioterrorism and emergency preparedness telehealth network. The State of Missouri should continue to work on meaningful educational and operational content to follow the significant federal investment in telehealth technology in the hospitals and community health centers of Missouri for the purposes of bioterror attack and emerging infectious disease preparedness.

    - The state should design, develop, and test the mechanisms, methods and procedures necessary to create and maintain a fully functioning statewide bioattack emergency response and preparedness plan (BERPP) plan that can be implemented within sixty minutes of a detected attack.

5. Explore options to expand non-Medicaid telehealth and all telepharmacy resources in the state of Missouri.

    A. Explore expanded funding for the Missouri Telemedicine Resource Center.

        - Funds would be used to provide services to all healthcare facilities and providers interested in developing telehealth services. The Missouri Telemedicine Resource Center would provide the following services:
        - Consultation on telehealth projects and proposals within Missouri.
        - Assistance with developing statewide collaborative efforts on telehealth projects.
        - Dissemination of local, State, regional and National telehealth activities.
        - Dissemination of local, State, regional and National policy issues impacting telehealth.
        - Dissemination of potential telehealth funding streams, including private and public sources.
        - Provide vendor management expertise.
        - Provide evaluation expertise (may or may not be fee based) to support research efforts on cost, quality and patient safety.
        - Support and encourage education and public service.
        - Missouri Telehealth Network has telehealth project management expertise.
        - Continue and expand the training curriculum started with the tobacco settlement funds.
        - Develop a web site for the dissemination of the information above.
        - Provide phone-based technical assistance.
        - Develop operational reference material.

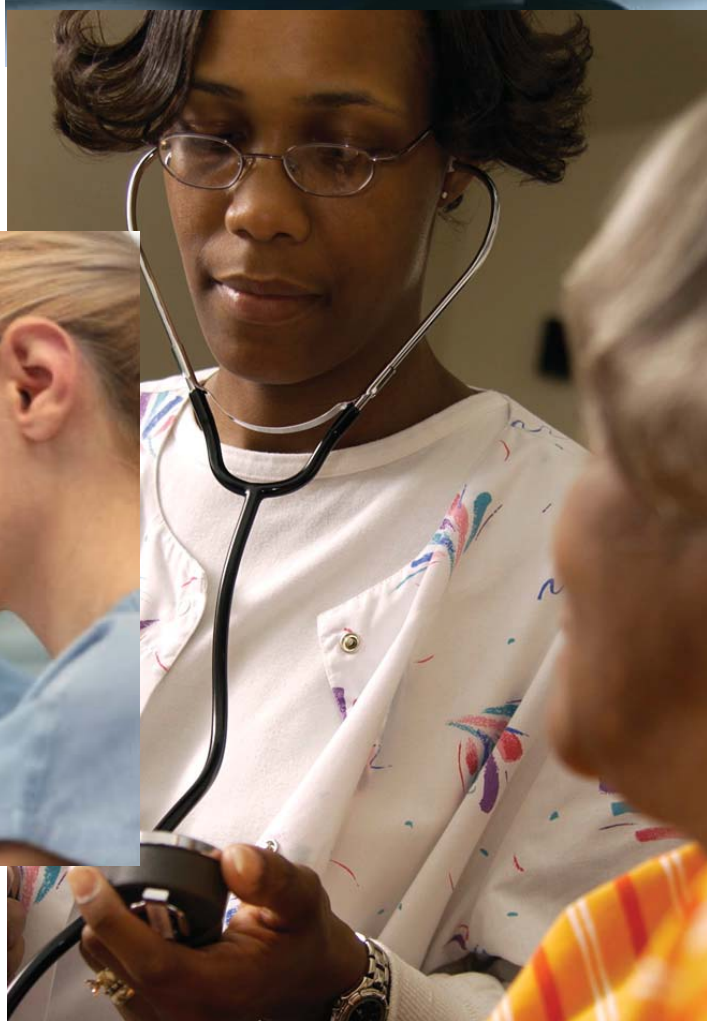
    B Create a statewide Missouri Telehealth Advisory Council to ensure the cogent expansion of telehealth networks and services. Members of the council should be from the public and private sectors, should be geographically diverse, and should have at least one member charged with acting as liaison to the proposed not-for-profit organization responsible for overseeing the development of healthcare information technology adoption in the state. This council is necessary to coordinate the ongoing increase in telemedicine activity in the state of Missouri and ensure new networks are interoperable with existing infrastructure. The Missouri Telehealth Advisory Council would be charged with:

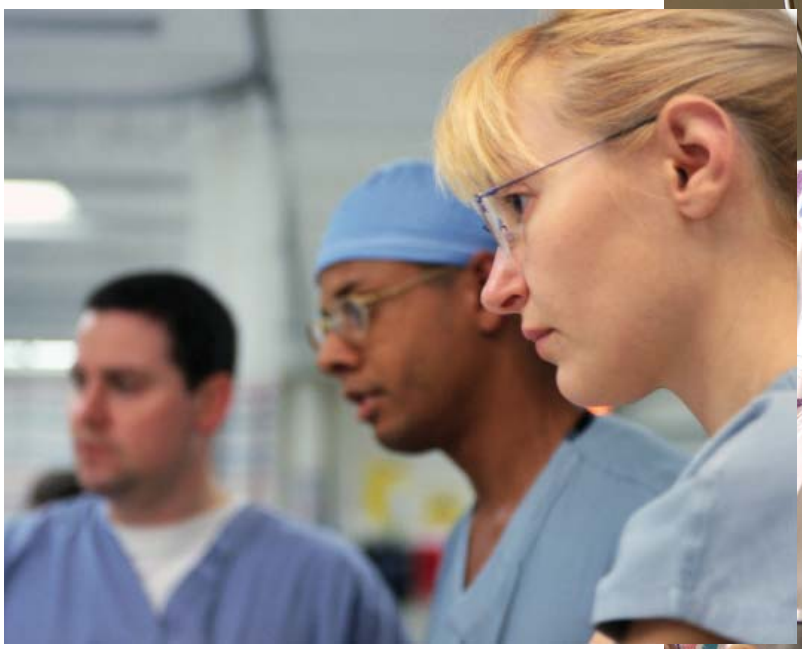
        - Fostering cooperation among networks in the state to maximize economies of scale while avoiding unnecessary duplication of effort, infrastructure, and dollars.
        - Reviewing the work of the Missouri Telemedicine Resource Center and

providing recommendations on a semi-annual basis.

- Providing governance for the application of telemedicine to our correctional care system.
- Expanding the use of telemedicine for captive or otherwise difficult to transport populations in Missouri.
- Providing governance recommendation for the implementation of community wide telepharmacy services to underserved communities by Missouri registered pharmacists and licensed pharmacies.

C. Develop the Missouri University Telehealth Research Group comprised of individuals from the School of Medicine, School of Nursing, School of Health Professions, Health Management and Informatics, Missouri Telemedicine Network, The MU Center for Health Care Quality and the MU Center for Health Policy. This group will be charged with the ongoing evaluation of new telehealth programs and perform quality and cost analyses to help determine where Missouri spends its next telehealth dollar.





Appendix A

Missouri Governor
Matt Blunt

EXECUTIVE ORDER 06-03

WHEREAS, according to the Centers for Medicare and Medicaid Services, healthcare expenditures in the United States totaled $1.7 trillion in 2003; and

WHEREAS, according to the New England Journal of Medicine, 31 cents of every healthcare dollar spent in the United States goes toward administrative costs and other expenses; and

WHEREAS, a 2005 study by the RAND Corporation estimates that the U.S. healthcare system could save $162 billion annually through the widespread use of healthcare information technology; and

WHEREAS, patient data is currently stored primarily in paper form and housed with individual providers, resulting in fragmentation of the healthcare industry; and

WHEREAS, individual providers have difficulty obtaining complete healthcare information in order to provide effective and beneficial treatment to their patients; and

WHEREAS, public health agencies are limited in their duties of disease surveillance, management and response capabilities by the current paper-based system for healthcare information storage and reporting; and

WHEREAS, there is a need to share healthcare information efficiently so that information is readily available to healthcare providers, consumers and public health agencies in order to make the best possible healthcare decisions; and

WHEREAS, healthcare information technology can improve patient safety and healthcare quality by reducing medical errors and adverse drug events through computerized physician order entry and E-prescribing and by facilitating better coordination of care through the availability of complete patient medical histories to multiple healthcare providers; and

WHEREAS, healthcare information technology can reduce healthcare costs through a reduction of duplicative medical tests, procedures and paperwork; and

WHEREAS, healthcare information technology has the potential to improve access to healthcare in underserved areas by supporting the advancement of telemedicine.

NOW THEREFORE, I, Matt Blunt, Governor of Missouri, by virtue and authority vested in me by the Constitution and laws of the state of Missouri, do hereby create and establish the Missouri Healthcare Information Technology Task Force.

The Task Force shall consist of fourteen (14) members appointed by the Governor. The Governor shall designate one (1) member to serve as Chair. All members shall serve at the pleasure of the Governor.

Members of the Task Force shall receive no compensation for their service to the people of Missouri.

The Task Force is assigned for administrative purposes to the Missouri Department of Health and Senior Services. The Director of the Missouri Department of Health and Senior Services shall be available to assist the Task Force as necessary, and shall provide the Task Force with any staff assistance the Task Force may require from time to time.

The Task Force shall meet at the call of its Chair, and the Chair shall call the first meeting of the Task Force as soon as possible.

The Task Force shall evaluate and make initial recommendations to me by July 1, 2006 on the following topics:

- Reviewing the current status of healthcare information technology adoption by the healthcare delivery system in Missouri;
- Addressing potential technical, scientific, economic, security, privacy and other issues related to the adoption of interoperable healthcare information technology in Missouri;
- Evaluating the cost of using interoperable healthcare information technology by the healthcare delivery system in Missouri;
- Identifying private resources and public/private partnerships to fund efforts to adopt interoperable healthcare information technology;
- Exploring the use of telemedicine as a vehicle to improve healthcare access to Missourians; and
- Recommending best practices or policies for state government and private entities to promote the adoption of interoperable healthcare information technology by the Missouri healthcare delivery system.

The Task Force shall prepare a final report and submit it to me by September 1, 2006.

The Task Force shall expire on December 31, 2006.

Appendix B
Task Force Membership

- ***Julie Eckstein*** of St. Peters serves as the chairperson for the Healthcare Information Technology Task Force. Ms. Eckstein was appointed Director of the Missouri Department of Health and Senior Services in February 2005 after two decades in community health and healthcare. Ms. Eckstein has a Bachelor of Science degree from the University of Missouri-Columbia and an MBA from Washington University in St. Louis.
- ***Dan Ross*** of Jefferson City is the chief information officer for the state of Missouri. Mr. Ross has thirty-seven years in public service, working for the Department of Natural Resources, Missouri State Parks, the Missouri Highway Patrol, the Public Service Commission, and as Executive Deputy Secretary of State to then Secretary of State Matt Blunt. Mr. Ross holds a bachelors degree in Industrial Relations from Lincoln University and a master's degree in Public Administration from the University of Missouri.
- ***Douglas K. Anning*** of Kansas City is a shareholder in the Business Law Department at Polsinelli Shalton Welte Suelthaus and vice chair of the Nonprofit Practice Group. Anning's focus is in the areas of general tax and corporate law, nonprofit and tax-exempt organizations and health care organizations. Anning holds a bachelor's degree in philosophy and a juris doctorate from the University of Kansas.
- ***Gary Duncan*** of Joplin is president and CEO of Freeman Health System. Duncan is responsible for an integrated health system with three hospitals and a community-based behavioral health unit covering nine counties. Duncan holds a bachelor's degree from Heidelberg College in Ohio and a master's of divinity from Eden Theological Seminary.
- ***Dr. Karen E. Edison*** of Columbia is the chairman of the Department of Dermatology at the University of Missouri School of Medicine and medical director for Missouri Telehealth Network. Edison is also the co-director for the Center for Health Policy at the University of Missouri. Edison holds bachelors degrees in biology and English from William Jewell College and a medical degree from the University of Missouri-Columbia.
- ***Rebecca L. Foudree*** of Independence is the co-owner of Grain Valley Pharmacy. Foudree's pharmacy offers immunizations for influenza, pneumonia and Hepatitis-B, and is a participant in Missouri's Medicaid disease state management program. Foudree holds a bachelor's degree in pharmacy from the University of Missouri-Kansas City.
- ***Dr. Joel D. Hassien*** of Hannibal operates a private practice. Hassien holds a bachelor's degree from Westminster College and a medical degree from the University of Missouri-Columbia.
- ***Gordon L. Kinne*** of Springfield is the president of Med Pay. Kinne established Med Pay in 1984 as a third party administrator involved in employee benefit administration. Kinne holds a bachelor's degree from Missouri State University.
- ***John W. McClellan*** of Kennett is chief executive officer of Twin Rivers Regional Medical Center. McClellan holds a bachelor's degree in accounting from Transylvania University in Kentucky and a master's of health administration from the University of Kentucky.
- ***Randy K. Meents***, PharmD, of Greenfield is the owner of Greenfield Pharmacy, Inc. He is also a consultant for two long-term care facilities in Dade County. Meents holds a bachelor's degree in pharmacy from Southwestern Oklahoma State University and a doctor of pharmacy degree from Creighton University School of Pharmacy.
- ***Michael G. Murphy*** of Chesterfield is the chief executive officer of Mercy Health Plans. Murphy holds a bachelor's degree in pharmacy from St. Louis College of Pharmacy and a master's in business from Washington University.
- ***Dr. Stephen L. Reintjes*** of Kansas City is a neurosurgeon at the Kansas City Neurosurgery Group, L.L.C. Reintjes holds a bachelor's degree in philosophy from Georgetown University and a medical degree from the University of Kansas School of Medicine.
- ***Richard A. Royer*** of Columbia is the chief executive officer of Primaris. Royer also owns Avalon Development, Inc, a management consulting firm specializing in healthcare. Royer holds a bachelor's degree in accounting from the University of Akron and a master's in business administration from Cleveland State University.
- ***Dr. Chad P. Shaffer*** of Kansas City is the chief medical information officer at Truman Medical Centers. Shaffer holds a bachelor's degree in biology and a medical degree from the University of Missouri-Kansas City.
- ***Joe Koenig,*** IT Director and ***Kimberley Sprenger,*** Fund Developer fro*m the Missouri Department of Health and Senior Services -- assistance to the Task Force.*

Appendix C
Task Force Vision, Guiding Principles & Time Line

A public website aided the communication efforts of the task force members and working group participants. Members of the public were able to view content information and provide comment. The site address is: http://www.dhss.mo.gov/HealthInfoTaskForce/

Visioning
"What does healthcare information technology look like in a perfect world?"

The following concepts defined the task force's vision for healthcare information technology: Partnership focused, uniform data set, variety of access levels, secure, accessible anywhere, "smart card" acts as the access device, data kiosks available at critical access points, biometrics, real-time data, interfaces with existing systems, incentives to enhance adoption efforts, improved patient care, patient-owned, opt-out provisions, the health record would include mental health components and notification reminders for preventative health screenings.

Guiding Principles

The task force adopted a set of guiding principles. The principles consist of five focus areas:

I. Consumer Centered System.
The needs and outcomes for the consumer are the focus of the system. A consumer centered system, rather than provider or vendor centered is favored. The individual patient's needs and the context in which he or she lives (e.g., home life, job, family relationships) can influence the patient's ability to act on the information provided must be considered. Ideally, informed, shared decision making and development of patient knowledge and skills needed for self-management are included.

II. Provider-Driven System
While the system needs to maintain the consumer as the center and focus of the system, healthcare providers will be the primary drivers of the system through the input of information. The system needs to be easy to use for providers and should provide a more efficient environment in which to provide patient care.

III. Utilizing Established Data Standards
A national common framework with sufficiently robust standards will be in place to support and guide participation. The common framework will consist of the essential technical and policy standards necessary to ensure interoperability, serve the patients whose data it shares, and connect systems of varying technical sophistication with accountability and transparency.

IV. A Framework for Connectivity
In order to provide the greatest benefit, clinical applications must connect with other clinical systems. There should be a common framework based on a decentralized network of networks that creates a pathway that facilitates information exchange, with appropriate authorization, in a private and secure way.

V. High Quality, Cost Effective Care
Cost-effective care does not necessarily mean cheap care but, rather, high-value care. Patients receive the right care, at the right time, at the right place and at the right cost. And, they get the best possible results. In addition, providing high-quality care that leads to better functioning outcomes creates benefits for many other parties not involved in health care. For instance, benefits accrue to the employers of better-treated patients through reduced absenteeism and higher productivity, to family members and friends through lower burdens of care for sick people, and to government agencies through fewer transfer payments (welfare, unemployment, and disability).

Appendix D
Working Group Participants

Best Practices Working Group

Dan Ross	Task Force Member, Working Group Chair
John McClellan	Task Force Member
Dr. Chad Shaffer	Task Force Member
Gordon Kinne	Task Force Member
Gary Duncan	Task Force Member
Michael Murphy	Task Force Member
Dr. Shawn Griffin	Heartland Health
Dr. George Oestreich	Missouri Department of Social Services, Division of Medical Services
Stacie Durkin	Durkin and Associates
Susan Elder	DHSS Staff Liaison

Current Status Working Group

Julie Eckstein	Task Force Chair, Working Group Chair
Rebecca Foudree	Task Force Member – Missouri Pharmacy Association
Dan Ross	Task Force Member
Ken Kuebler	Missouri Hospital Association
John Wade	VP/CIO for Saint Luke's Health System
Teresa Knox	Health Information Management Association
Jeffrey Kerr	Missouri Association of Osteopathic Physicians and Surgeons and Board of Senior Services member
Andrew Johnson	Primaris
Pam Victor	Missouri Association of Health Plans
Gordon Won	Blue Cross/Blue Shield – Wellpoint
Pat Mills	Missouri State Medical Association
Patrick Baker or Jon Dolan	Missouri Healthcare Association
Kerri Hock	Missouri Assisted Living Association
Cathy Thompson	Missouri Assisted Living Association
Betsy Stevens	Missouri Association of Nursing Home Administrators
Justin Copeland	Missouri Primary Care Association
Kim Arnold	Missouri Primary Care Association
Wilbert Meyer	Missouri Rural Health Association
Mahree Skala	Missouri Association of Local Public Health Agencies
Jacob Lippert	Missouri Dental Association
Joyce Baker	Missouri Optometry Association
Cory Ridenhour	Missouri Optometry Association
Belinda Heimericks	Missouri Nurses Association
Clive Woodward	Department of Mental Health
Dr. George Oestreich	Department of Social Services, Division of Medical Services
Bill Whitmar	Health laboratories
Joe Koenig	DHSS Staff Liaison
Kimberley Sprenger	DHSS Staff Liaison

Issues Working Group

Chad Shaffer	Task Force Member, Working Group Chair
Dr. Karen Edison	Task Force Member, Working Group Vice-Chair
Dr. Joel Hassien	Task Force Member
Doug K. Anning	Task Force Member
Michelle Kornfeld	Missouri Health Information Management Association
Tony Krawat	St. John's Mercy Health Center
Rebecca Miller	Missouri Center for Patient Safety
Larry Musbach	Quick Study Radiology
K. Jody Smith	St. Louis University, Department of Health and Information Management
Julie Wolter	St. Louis University, Department of Health and Information Management
John Daniel	Gridlox, Inc.
Steven E. Waldren	Center for Health Information Technology
Skip Martin	SynApps Software
Elena Vega	DHSS Staff Liaison

Resources Working Group

Richard Royer	Task Force Member, Working Group Chair
Michael Murphy	Task Force Member, Working Group Co-Chair
Dr. Steve Reintjes	Task Force Member
Bill Bruning	Mid-America Coalition on HealthCare
Becky Miller	Missouri Center for Patient Safety
John Wade	St. Luke's Healthy System/KCREE
Michael Armstrong	DHSS Staff Liaison

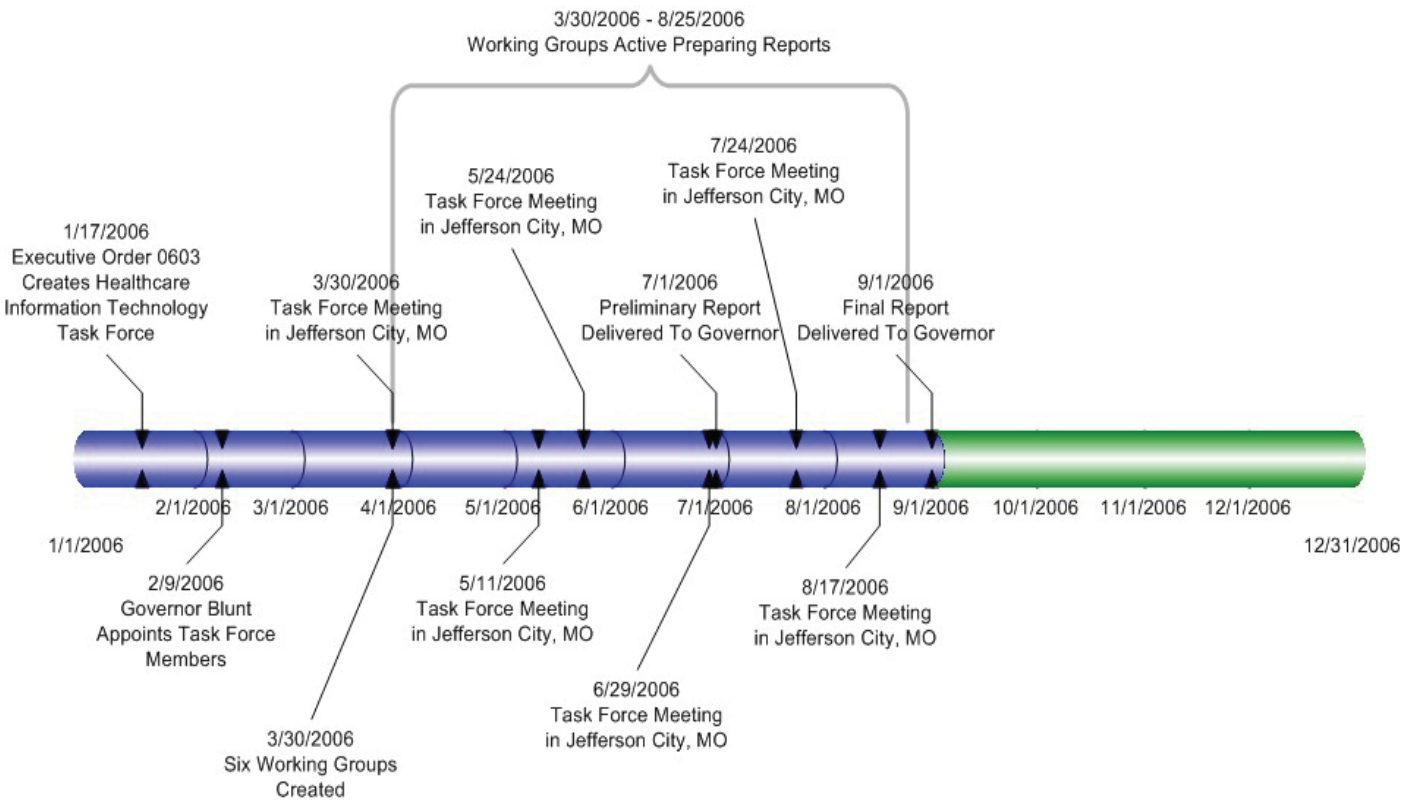
Telemedicine Working Group

Dr. Karen E. Edison	Task Force Member, Working Group Chair
Randy Meents, PharmD	Task Force Member
Dr. Joel Hassien	Task Force Member
Deborah Beezley	Director, Health Information Management Association
Dick Dillon	Preferred Family Healthcare
Cheryl L. Fitch	Oxford HealthCare
Jill Harrelson	Children's Mercy Hospital, Kansas City
Stephen Kropp	Saint Luke's Health System
Rachel Mutrux	Missouri Telehealth Network
Jody Smith	Health Informatics and Information Management, St. Louis University
Dr. Stuart Charles Sweet	St. Louis Children's Hospital
Karen Thomas	Oxford HealthCare
Weldon Webb	Director of Rural Programs, University of Missouri School of Medicine
Dr. Bao Ping Zhu	DHSS Staff Liaison

Cost Evaluation Working Group

Doug Anning	Task Force Member, Working Group Chair
Gordon Kinne	Task Force Member
Randy Meents	Task Force Member
Dr. Steve Reintjes	Task Force Member
Matt Niewald	Dentist
Patrick Boyle	IBM
Craig Johnston	Zak Companies
Keith Olenik	Olenik Consulting Group
John Wade	Saint Luke's Health System
Tom Pagano	Truman Medical Center
David Weiss	BJC
Phil Reed	DHSS Staff Liaison

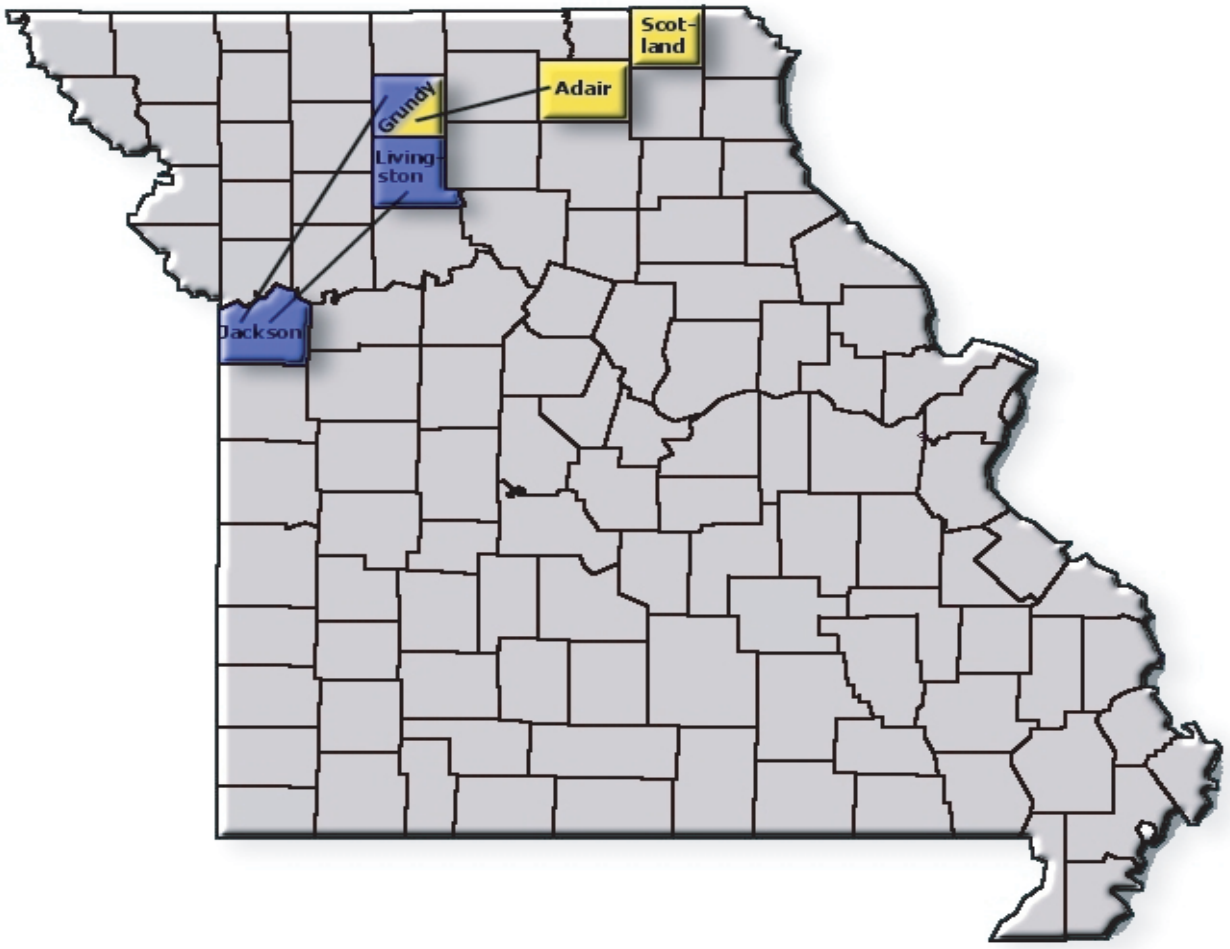
January 17, 2006 - September 1, 2006
Timeline of Events



Appendix E

Telehealth Service Sites Advanced ICU Care & St. Luke's Hospital

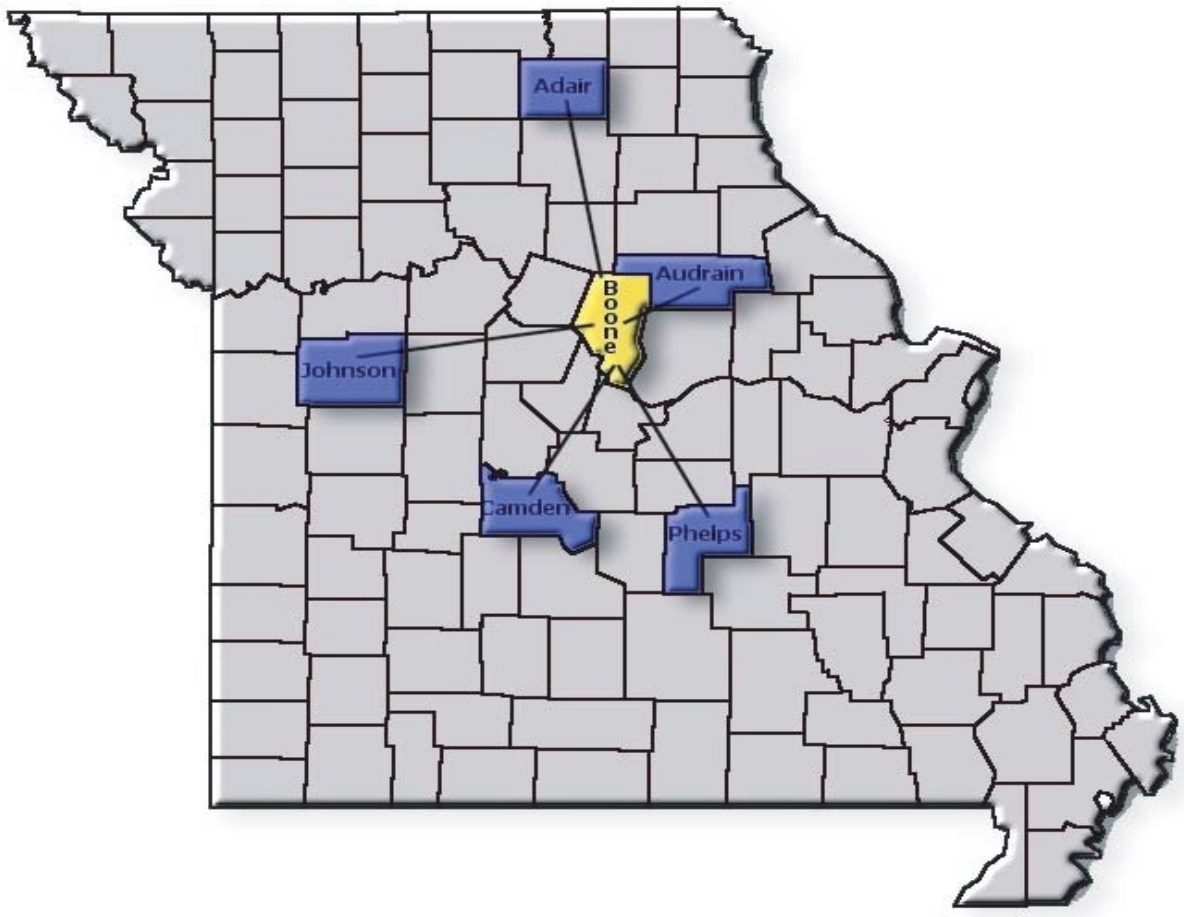
St. Luke's Hospital & North East Missouri Telehealth Network



St. Luke's Hospital, Kansas City Telecardiology to Chillicothe & Trenton

NEMTN - Preferred Family Healthcare, Kirksville Telepsychiatry to Preferred Family, Trenton

Missouri Telehealth Network & Other Teleradiology Sites



Boone - Harry S. Truman Memorial VA Hospital, Columbia

Adair - North East Missouri Health Council, Kirksville

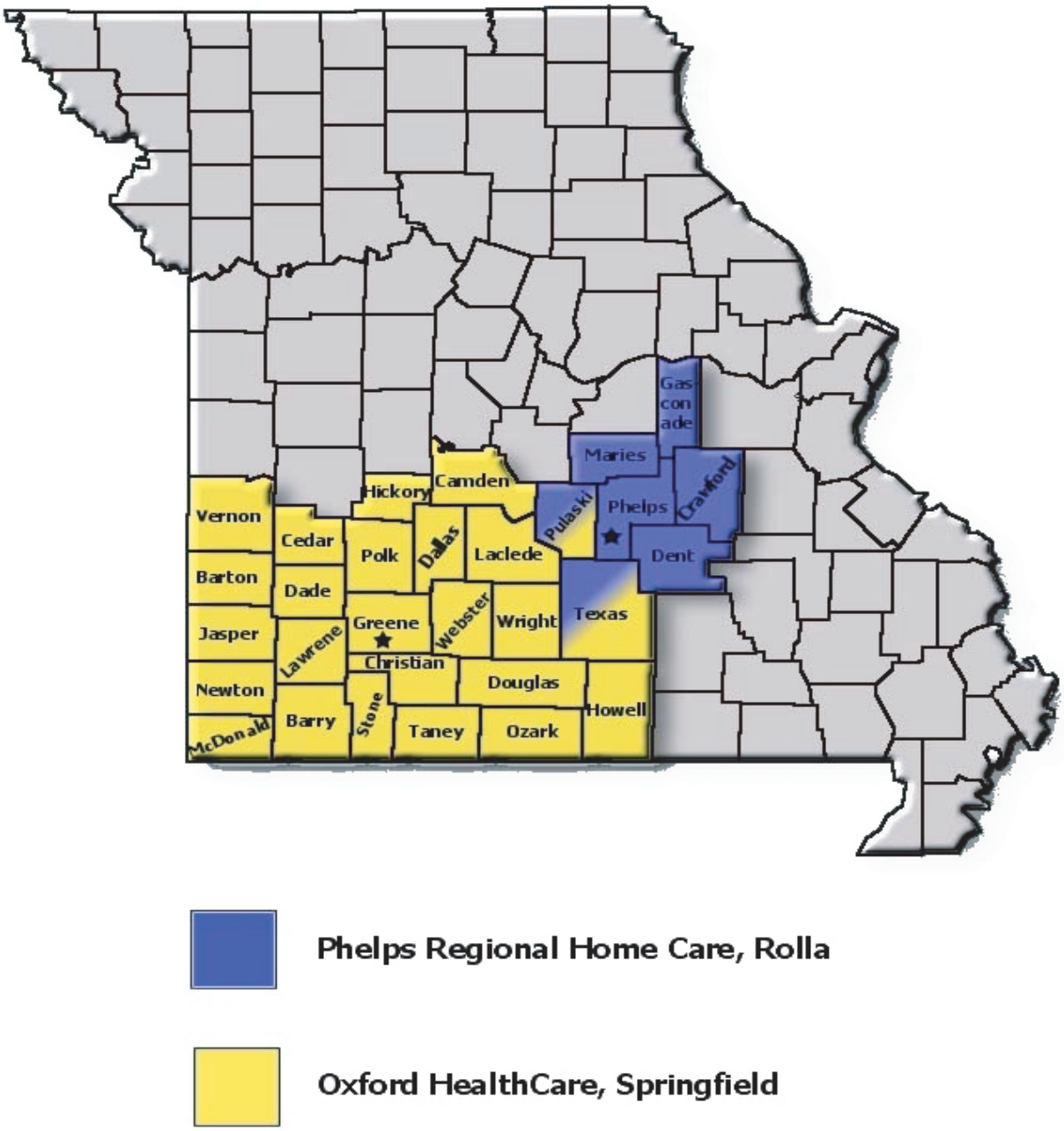
Audrain - Mexico VA Clinic, Mexico

Camden - Lake of the Ozarks Clinic, Camdenton

Johnson - Whiteman Air Force Base

Phelps - St. James VA Clinic, St. James

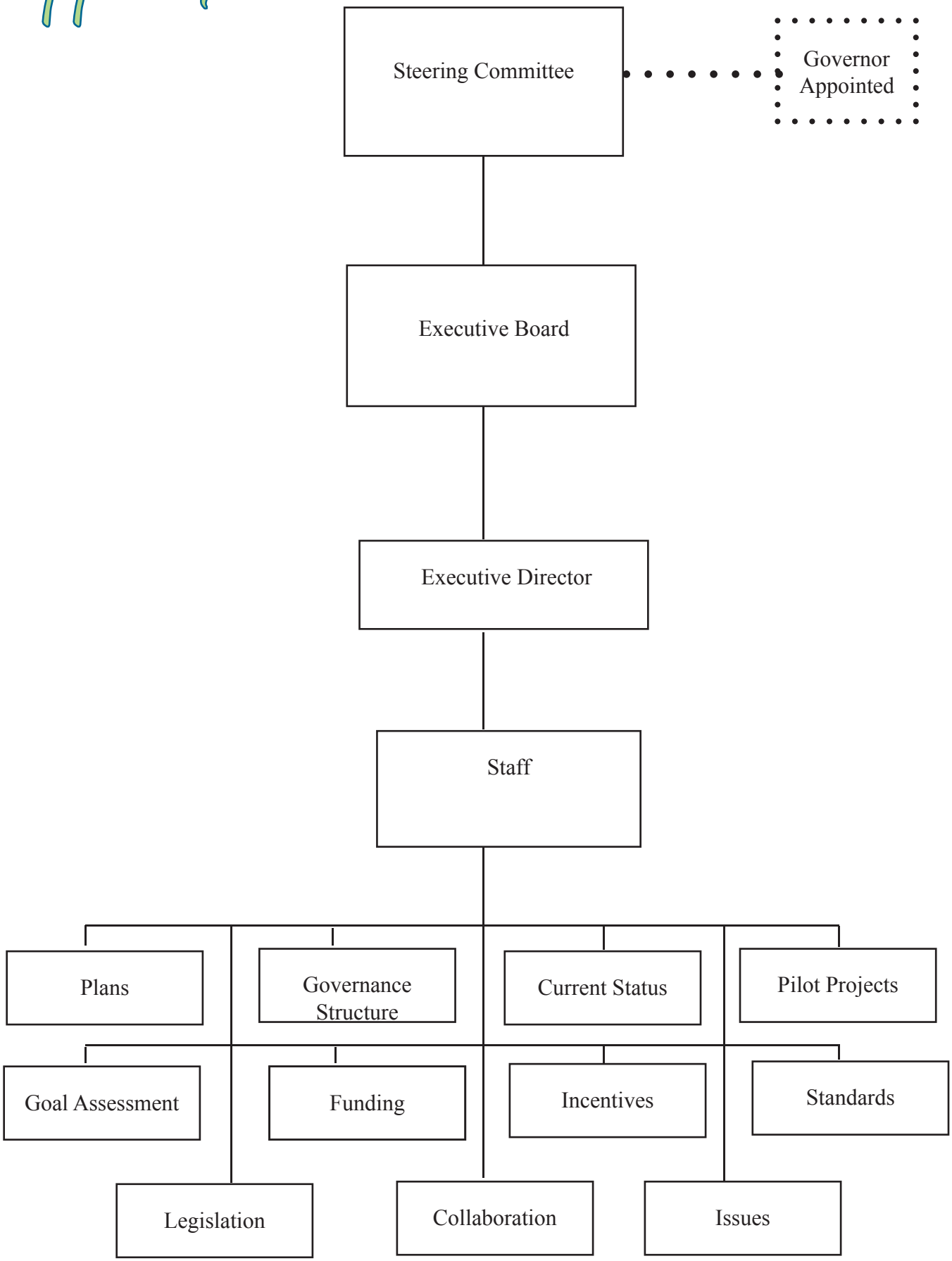
Phelps Regional Home Care
&
Oxford HealthCare
Telehome Health



Phelps Regional Home Care, Rolla

Oxford HealthCare, Springfield

Appendix F


Steering Committee
Governor Appointed
Executive Board
Executive Director
Staff
Plans
Governance Structure
Current Status
Pilot Projects
Goal Assessment
Funding
Incentives
Standards
Legislation
Collaboration
Issues

Appendix G

Telehealth Medicaid Legislative and Regulatory Roles in Other States – Medicaid State Profiles

Legislative and Regulatory in Other States

Licensure

The National Conference of State Legislatures' (NCSL) website lists a summary for each state that summarizes legislation that addresses various issues related to telehealth. One of the most discussed topics is licensure. Nearly half of the states listed addressed this issue. Many states gave specific and direct guidelines. For example in Mississippi: "The act provides that no person will engage in the practice of telemedicine across state lines in this state unless they obtain a license from the State Board of Medical Licensure." Other states require a "special purpose license" or a "certificate" to practice telemedicine in their state. Some states specify the type of service provided by the non-resident physician to determine whether a license is required. New Hampshire requires out-of-state radiologists who are providing radiological services by way of teleradiology to obtain a New Hampshire medical license. Connecticut requires physicians from other states to be licensed in Connecticut, if they are performing "diagnostic or treatment services" on residents of Connecticut via "electronic communications".

Some states allow physicians to practice across state lines, but only "in certain circumstances" or "with certain exceptions". For instance, Colorado designates a specific hospital, Shriners, outside of Colorado where physicians are allowed to evaluate and treat children in Colorado without obtaining a Colorado state license. Connecticut requires non-resident physicians to be licensed in their state, but if "…he/she consults on an irregular basis with a Connecticut-licensed physician," then a Connecticut state license is not required. While others state "…that a physician who is physically located outside the state but who, through any medium, performs patient care services that were initiated in the state, is practicing medicine in this state and subject to appropriate regulation by the Board of Medicine."

Medicaid

According to the Centers for Medicare & Medicaid Services (CMS) there are 22 states where "Medicaid recognizes physician consultations when furnished using interactive video teleconferencing." These vary from state to state. Most of the states listed did not specify the type of consultation. One state may specify medical and mental health consultations and another may specify "initial, follow-up or confirming consultations". Medicaid in Nebraska covers services as long as comparable services are not available to the patient within a 30-mile radius of his/her home. Utah Medicaid is very specific in the type of provider (e.g. psychiatrist, psychologist, social workers, psychiatric registered nurse and certified marriage and family therapists). Also, the use of non-interactive video teleconferencing is recognized in a few states.

Payment is on a fee-for-service basis. In most cases reimbursement for services is the same as covered services provided in the typical face-to-face manner and are made at both ends (hub and spoke sites). However, in Kansas compensation for home health care via telemedicine is at a reduced rate and is only for the service provided at the hub site. Also, in North Carolina "The consulting practitioner at the hub site will receive 75 percent of the fee schedule amount for the consultation code. The referring practitioner at the spoke site receives 25 percent of the applicable fee." Sometimes a transmission fee or cost is incurred and Medicaid covers that fee as well.

Each state uses specific codes to distinguish telemedicine services from other services. These also vary from state to state. The most common is consultative CPT codes with the "TM" modifier for telemedicine services, but some states have developed their own local codes. Minnesota Medicaid recognizes physician consultations when furnished using store-and-forward technology. They use the consultative CPT codes with a "WT" modifier for consultations provided through store-and-forward.

Nurse Licensure Compact

As of March 31, 2006, twenty states had enacted the RN and LPN/VN Nurse Licensure Compact with three states pending implementation. According to the National Council of State Boards of Nursing (NCSBN) "The mutual recognition model of nurse licensure allows a nurse to have one license (in his/her state of residency) and to practice in other states (both physical and electronic), subject to each state's practice law and regulation. Under mutual recognition, a nurse may practice across state lines unless otherwise restricted."

There are several benefits for a state to implement the Nurse Licensure Compact (NLC). One is that it allows for nurses to be more mobile which will allow for improved access to licensed nurses during a disaster or at times when qualified nursing services are in great need. It also provides clarification of the authority to practice for many nurses currently involved in telenursing across state lines. Lastly, among participating NLC states it enhances communication regarding disciplinary action against a nurse. The NCSBN has developed a licensure information system, Nursys, to share such information among all NLC states.

Alabama

Ala. Code § 34-9-110 (1999) Authorizes the board of dental examiners to issue a special purpose license to practice dentistry across state lines. Prohibits a person from engaging in the practice of dentistry across state lines in Alabama, unless he or she has been issued a special purpose license to do so. Dentists who practice dentistry across state lines on an irregular or infrequent basis are not required to obtain the special purpose license.
Ala. Code § 34-22-25 et seq. authorizes the Board of Optometry to issue a special purpose license to practice optometry across state lines. This act provides for the terms, conditions and renewal of that license; exceptions to licensure and for reciprocity of the license requirements.
Ala. Code § 34-24-500 et seq. authorizes the practice of medicine or osteopathy across state lines only with the issuance and regulation of special purpose licenses if the applicant is certified by the state Board of Medical Examiners.

Alaska

1997 Alaska Sess. Laws, S. Concur. Res. 6 recognizes the Alaska Telemedicine Project, its founding organizations and its leadership as the officially sanctioned telemedicine and telehealth project in the state.

Arizona

Ariz. Rev. Stat. Ann. § 36-3601 et seq. requires a health care provider to obtain verbal or written informed consent from the patient prior to delivering health care via telemedicine. The act provides that all medical reports resulting from a telemedicine consultation are part of the patient's medical records and the patient is entitled to all existing confidentiality protections. In addition, the patient's consent is required prior to dissemination of any of the images or information identifiable to a specific patient for research or educational purposes.
1996 Ariz. Sess. Laws, Chap. 36 (HB 2224) creates a new chapter regulating the practice of health care delivery through telemedicine and requires a provider to obtain verbal or written informed consent from a patient before delivery health care through telemedicine, with exceptions. The act also requires confidentiality protections for patients.
1996 Ariz. Sess. Laws, Chap. 342 (H 2440) establishes a technology and telecommunications fund to finance the enhancement and extension of the Arizona telecommunications systems. The act establishes a government information technology agency to maintain a statewide information technology plan. The act also establishes an information technology authorization committee to review statewide information technology standards and the plan and approve or disapprove projects that exceed $1 million.

Arkansas

1999 Appropriation Bill Amending § 6-47-101 et seq. provides $1.26 million in grants to public and/or non-profit entities for the development of a statewide distance learning and telemedicine network.
Ark Stat. Ann § 17-80-109 et seq. (1999) prohibits the use of the title "Doctor" - or advertising of oneself as a "doctor" - in electronic documents, unless that title is authorized under Title 17 of the Arkansas Code.
Ark Stat. Ann § 17-87-601 et seq. (1999) adopts the Nurse Licensure Compact. The Compact facilitates coordination among states by creating a "coordinated licensure information system." A license to practice registered nursing issued by a home state will be recognized as authorizing a multistate licensure privilege to practice as a registered nurse in such party state.
Ark. Stat. § 17-95-206 and 207 provides that a physician who is physically located outside the state but who, through any medium, performs patient care services that were initiated in the state, is practicing medicine in this state and subject to appropriate regulation by the Board of Medicine.

California

Cal. Health and Safety Code § 1374.13 recognizes telemedicine as a means for receiving medical services. It also establishes that certain telemedicine services are reimbursable under the Medi-Cal program.
Cal. Health and Safety Code § 1375.1 (1999) requires health plans to include telemedicine services in their procedures for prompt payment or denial of provider and subscriber or enrollee claims.
Cal. Welfare and Institution Codes § 14016.51, Chapter number 389 (2003) Existing law provides for the Medi-Cal program, administered by the State Department of Health Services, pursuant to which medical benefits are provided to public assistance recipients and other low-income persons. Also allows applicants in countries served by manged health care plans to contact the enrollment contractor by using the Health Care Options toll free-number to request enrollment materials before a Medi-Cal eligibility determination has been made. (SB 785)
Cal. Business and Professions Code § 2290.5 revises some of the protections granted to patients of telemedicine to require that all existing laws regarding patient access to medical information and copies of medical records and surrogate decision-making, as defined, are to apply.
Cal. Business and Professions Code § 2472 (2003) states that the provisions of law regulating telemedicine apply to the practice of a podiatrist. (AB 116)
Cal. Business and Professions Code § 4980.01 (2003) states that the provisions of law regulating telemedicine apply to the practice of a licensed marriage and family therapist. (AB 116)
Cal. Business and Professions Code § 4996 (2003) states that the provisions of law regulating telemedicine apply to the practice of a licensed clinical social worker. (AB 116)
Cal. Business and Professions Code § 1626.2 (2003) states that the provisions of law regulating telemedicine apply to the practice of a dentist. (AB 116)
Cal. Business and Professions Code § 2904.5 (2003) states that the provisions of law regulating telemedicine apply to the practice of a psychologist. (AB 116)
1996 Cal. Stats., Chap. 864 (SB 1665) enacts the Telemedicine Development Act of 1996, setting standards for the use of telemedicine by health care practitioners and insurers. The act prohibits health insurers from requiring face-to-face contact between a health care provider and patient for services appropriately provided through telemedicine, subject to the terms of the contract.
1996 Cal. Stats., Chap. 902 (SB 2098) authorizes the Medical Board of California to develop a proposed registration program that would permit physicians, surgeons and podiatrists located outside the state to practice medicine across state lines and requires them to meet the legal requirements of the state.

Colorado

Colo. Rev. Stat. § 12-36-106 expands the definition for the practice of medicine to include holding out one's self to the public within this state as being able to diagnose, treat, prescribe for, palliate, or prevent any human disease, ailment, pain, injury, deformity, or physical or mental condition, by telemedicine, the interpretation of tests, including primary diagnosis of pathology specimens, images or photographs. The act also specifies that nothing in this section is to prohibit patient consultation between a practicing physician licensed in Colorado and a practicing physician licensed in another state or jurisdiction.
Colo. Rev. Stat. § 12-36-107 (1999) enables physicians from Shriners hospitals (outside of Colorado) to evaluate and treat, in Colorado or via telemedicine, children who could benefit from the medical care provided by the Shriners hospitals.
Colo. Rev. Stat. § 10-16-123 (2001) provides that health benefit plans for persons in rural areas may not require face-to-face contact for certain services. The law also states that such plans are not required to pay for consultation provided by telephone or facsimile.
Colo. Rev. Stat. § 23-1-106.5 (1999) empowers the Colorado Commission on Higher Education to develop the necessary infrastructure to support distance learning, telemedicine, and enhanced citizen access.
Colo. Rev. Stat. § 26-4-421 (2001) specifies that telemedicine is only to be used in areas where the technology exists, and outlines quality requirements for telecommunications equipment used for telemedicine services. The law also instructs the Department of Health Care Policy and Financing to report to the legislature on the use of telemedicine for various medical services in the state.

Colorado Senate Bill 244(2005) concerns increased access to health care through the use of appropriate technologies. Also endorses the use of telemedicine and authorizes the negotiation of interstate agreements to promote efficiency in the delivery of medical and nursing services. **Signed by Governor May 26, 2005. Chapter 162.**

Connecticut

1996 Conn. Acts, P.A. 96-148 (SB 225) requires physicians from other states performing diagnostic or treatment services for state residents through electronic communications or interstate commerce to be licensed in Connecticut. Treatment services include primary diagnosis of pathology specimens, slides, or images. The act also requires licensing of out-of-state physicians who provide official written reports of their diagnostic evaluations based on electronically transmitted radiographic images to in-state physicians or patients. A nonresident physician does not need a state license if he/she consults on an irregular basis with a Connecticut-licensed physician or consults with a medical school in Connecticut for educational or medical training purposes.

Delaware

Del. Code Ann. 24 § 19A (2000) adopts the Nurse Licensure Compact. The Compact facilitates coordination among states by creating a "coordinated licensure information system." A license to practice registered nursing issued by a home state will be recognized as authorizing a multistate licensure privilege to practice as a registered nurse in such party state.
Del. Code Ann. Tit. 24, § 710 (1999) permits reciprocal license with registration for out of state chiropractic doctors.

Georgia

Ga. Code Ann. § 50-5-190 et seq. creates the Georgia Distance Learning and Telemedicine Act of 1992. The law authorizes the Georgia Technology Authority to develop a statewide distance learning and telemedicine network to enhance educational quality and improve delivery of medical care.
Ga. Code Ann. § 50-5-200 (2003) modifies the Georgia Distance Learning and Telemedicine Act of 1992, so that funds available in the Universal Service Fund can be used for a wider variety of purposes. (HB 456)
Ga. Code Ann. § 43-34-31.1 requires physicians physically located in another state or foreign country who perform certain patient care services in Georgia through the use of telecommunication to be licensed to practice medicine in the state, with certain exceptions.
1996 Ga. Laws, p. 1039 (S 46) requires the Board of Regents of the University System of Georgia to prescribe criteria, policies and standards deemed necessary for the effective implementation of programs within the university system financed wholly or partially from appropriations from the Lottery for Education Account and provide professors and instructors the necessary training in the use and application of computers and advanced electronic instructional technology to implement interactive learning environments in the classroom and to access the statewide distance learning network.
Georgia House Bill 291(2005) relates to insurance and medical insurance policy deductibles. Provides that health policies include payments for telemedicine services. **Signed by Governor May 2, 2005. Act No. 82**

Hawaii

Hawaii Rev. Stat. § 457-2 et seq. (2000) defines telehealth and authorizes the Board of Nursing to develop and adopt rules relating to the practice of nursing in telehealth.
Hawaii Rev. Stat. § 460-1 et seq. (1999) allows out-of-state physicians to consult with an in-state licensed Hawaii physician without having to obtain a full Hawaii license.
Hawaii Rev. Stat. § 431:10A and 432:1 prohibits accident and sickness insurance plans, mutual benefit societies plan, and HMOs to require face-to-face contact between a health care provider and a patient as a prerequisite for payment for services appropriately provided through telehealth in accordance with generally accepted health care practices and standards prevailing in the applicable professional community at the time the services were provided. The law provides that telehealth means the use of telecommunications and enhanced services to deliver health and health care services and information to parties separated by distance and adds that telephone, facsimile

transmissions, or both in the absence of other integrated information and data do not constitute telehealth services.
Hawaii Rev. Stat. § 453-2 et seq. permits in person, mail, electronic, telephonic, fiber optic, or other telemedicine consultation with a licensed physician from another state. The act requires the Hawaii licensed physician to retain control and remain responsible for the provision of care for the patient.

Idaho

Idaho Code § 39-5901 et seq. (2000) creates the "Rural Health Care Access Fund" which allows for grants of up to $35,000 per year for three years to be awarded to medically underserved communities. Grants can be used for telehealth projects.

Illinois

Ill. Rev. Stat. ch. 225 § 60/49.5 specifies that physicians in other states may not practice medicine in Illinois by electronic transmission of patient data without being licensed as physicians in Illinois. Second opinions, doctor-to-doctor consults, and follow-up care after treatment in the other state are exempted.
Ill. Rev. Stat. Ch. 20 § 2305/8.3 (1997) instructs the Department of Public Health to study the feasibility of using telemedicine technology for homebound individuals and those in rural areas.

Indiana

Special session Ind. Code § 20-10.1-25.6 appropriates funds for state programs, including educational technology. The act requires the Intelenet Commission, with the Department of Education and the state library, to coordinate available federal and state funds and funding mechanisms to accomplish full access to telecommunications services and equipment by all schools, libraries, and rural health care providers.
1996 Ind. Acts, P.L. 180 (HB 1294) amends the definition of the "practice of medicine or osteopathic medicine" to include providing diagnostic or treatment services to a person in Indiana when the diagnostic or treatment services: are transmitted through electronic communications; and are on a regular, routine and nonepisodic basis or pursuant to an oral or written agreement to regularly provide medical services.

Iowa

1997 Iowa Acts, Chap. 209 (SF 542) authorizes the Department of Health and Human Services to conduct a pilot project for the administration of telemedicine services under the medical assistance program. The department must evaluate the project and report on the savings realized through the use of teleconsultive services.

Kansas

Kan. Stat. Ann. § 76-389 (1994) authorizes the University of Kansas Medical Center to establish, maintain and operate a telemedicine communications system. The law also establishes the telemedicine advisory committee to make recommendations about the administration of the system and establish standards for utilization of the system.

Kentucky

Ky. Rev. Stat. § 11.550 (2000) creates the Telehealth Board, which is to develop a telehealth network with 4 training sites and up to 25 rural sites.
Ky. Rev. Stat. § 205.559 (2000) prohibits Medicaid and private insurers from excluding services from coverage solely because the service was provided through telehealth. The law requires treating physicians to ensure informed consent by the patient and confidentiality of medical information.
Ky. Rev. Stat. § 310.200 (2000) requires dieticians and nutritionists to ensure informed consent and patient confidentiality when using telehealth services.
Ky. Rev. Stat § 311.5975 (2000) requires physicians to ensure informed consent and patient confidentiality when using telehealth services.
Ky. Rev. Stat. § 312.220 (2000) requires chiropractors to ensure informed consent and patient confidentiality when using telehealth services.

Louisiana

La. Rev. Stat. § 40:2144(H) authorizes the Department of Health and Hospitals to promulgate rules to regulate the use of orders for the care and treatment of hospital patients transmitted electronically.
La. Commerce Stat. § 45:844.12(4) (2004)Exempts calls from optometrists, dentists, and chiropratic physicians to their patients and veterinarians calls to their clints from "do not call" law. (HB 189)

Maine

Maine House Bill 437(2005) directs the Department of Health and Human services to provide alternatives to MaineCare's mail order pharmacy, including a study of telepharmacy. **Signed by Governor June 3, 2005. Resolve No. 83.**

Maryland

Md. Health Occupations Code Ann. § 8-7A-01 (1999) adopts the Nurse Licensure Compact. The Compact facilitates coordination among states by creating a "coordinated licensure information system." A license to practice registered nursing issued by a home state will be recognized as authorizing a multistate licensure privilege to practice as a registered nurse in such party state.

Minnesota

Minn. Stat. § 144.147 (1999) creates grants for eligible rural hospitals to establish a telemedicine system, a health care cooperative or a rural health care system.
Minn. Stat. § 256B.0625 (1999) authorizes Medical assistance coverage for telemedicine consultations via two-way, interactive video or store-and-forward technology.
Minn. Stat. § 147.032 (2002) allows physicians licensed in other states but not Minnesota to provide medical services through telemedicine under certain circumstances. (SB 3026)

Mississippi

Miss. Code Ann. § 41-3-15 authorizes the state Department of Health to promulgate rules and regulations and collect data on the delivery of services through the practice of telemedicine and the use of electronic records for the delivery of telemedicine services.
Miss. Code Ann. § 73-25-34 defines telemedicine as the rendering of a medical opinion concerning diagnosis or treatment of a patient within this state by a physician located outside this state as a result of transmission of data by electronic or other means; or the rendering of treatment to a patient within this state by a physician located outside this state as a result of transmission of individual patient data by electronic or other means from within this state to such physician or his agent. The act provides that no person will engage in the practice of telemedicine across state lines in this state unless they obtain a license from the State Board of Medical Licensure.

Missouri

Mo. Ann. Stat. § 324.203, 324.205 and 324.207 makes it unlawful for people not licensed as physicians to engage in the practice of medicine across state lines and also establishes a definition of the practice of medicine across state lines.

Montana

Mont. Code Ann § 37-3-343 (1999) prohibits a physician from practicing telemedicine in Montana without a telemedicine certificate. Physicians practicing in Montana via telemedicine are subject to Montana's licensure and regulatory requirements.
Mont. Code § 2-4-102, 69-3-305, 69-3-803 and 69-3-1001 revises the laws relating to the regulation of telecommunications services in response to the federal Telecommunications Act of 1996.

Nebraska

Neb. Rev. Stat. § 71-8503 (1999) creates the Nebraska Telehealth Act; requires Medicaid-enrolled providers to ensure that patients sign a written statement prior to the initial teleconsultation. Health care services delivered through telehealth are covered by and reimbursed under the medicaid fee-for-service program. In-person contact between a health care practitioner and a patient shall not be required under the medical assistance program. The reimbursement rate for a telehealth consultation shall be set at the same rate as the medical assistance program rate for a comparable in-person consultation.
Neb. Rev. Stat. § 71-7605 et seq. creates the Excellence in Health Care Trust Fund which will be used for awarding grants for health infrastructure development which is supportive of telemedicine capability, including, but not limited to, high-speed data and medical information transmission.
Neb. Rev. Stat. § 71-1, 102 and 103 amends the classes of people who are deemed to be engaged in thepractice of medicine and surgery by including people who are physically located in another state but who, through the use of any medium, including an electronic medium, perform for compensation any service that constitutes the healing arts that would affect the diagnosis or treatment of an individual located in this state, unless he or she is providing consultation services to a physician and surgeon who is duly licensed in this state and is a treating physician of the individual.

New Hampshire

N.H. Rev. Stat. Ann. §§ 246:1 and 329:1-b (1999) establishes that out-of-state physicians providing radiological services for New Hampshire patients by means of teleradiology shall be deemed to be in the practice of medicine and as such, are required to obtain a New Hampshire medical license.
N.H. Rev. Stat. § 157.1 et seq. establishes a committee to study and report on the use of telemedicine, defined as the provision of diagnostic or treatment services through electronic communications to any person located in this state, including such concerns as licensing, professional standards and reimbursement matters.

New Mexico

N.M. HB 581 (2004), the New Mexico Telehealth Act, recognizes and encourages telehealth as a safe, practical and necessary practice, and requires health care providers to comply with federal and state guidelines and rules. Chapter #48
1996 N.M. Laws, H. Jt. Mem. 21 requests the state corporation commission and the appropriate legislative committee to cooperate in a study of telecommunications laws and regulations as they affect programs for distance learning, telemedicine and access to information and public services.
New Mexico Senate Bill 456(2005) expands the Primary Care Capital Funding Act to include school-based health centers and telehealth sites, as well as providing loan eligibility requirements. **Signed by Governor, March 28, 2005. Chapter No. 54.**
New Mexico Senate Bill 473(2005) establishes a Telehealth Commission. **Signed by Governor, March 28, 2005. Chapter No. 55.**

North Carolina

N.C. Gen. Stat. § 90-171.80 et seq. (1999) adopts the Nurse Licensure Compact. The Compact facilitates coordination among states by creating a "coordinated licensure information system." A license to practice registered nursing issued by a home state will be recognized as authorizing a multistate licensure privilege to practice as a registered nurse in such party state.
N.C. Gen. Stat. § 90-18 and 90-21.12A makes it clear that when a person, whether that person resides in North Carolina or out of state, performs acts constituting the practice of medicine or surgery by the use of any electronic or other mediums, that person must be registered and licensed to practice medicine in this state, and is subject to the rules and regulations set forth by the North Carolina Medical Board. However, if a nonregistered physician or surgeon comes into North Carolina, either in person or by the use of electronic or other mediums, on an irregular basis for the purposes of consulting, the physician or surgeon does not need to be licensed under the laws of this state.

North Dakota

N.D. Cent. Code § 43-17-02.3 (1999) Any physician licensed in another state may practice in North Dakota, without first obtaining a license, in certain circumstances, including one-time consultations or for consultations to charitable organizations.

Ohio

Ohio Rev. Code Ann. § 4731.296 (2001) requires physicians to obtain a certificate from the state medical board in order to practice telemedicine in the state.

Oklahoma

Okla. Stat. tit. 63 § 1-2701 et seq. establishes the Telemedicine Advisory Council, designates the state Department of Health as responsible for the Oklahoma Telemedicine Network and authorizes the implementation of a telemedicine pilot program to provide verifiable data on how telemedicine can improve medical services for correctional inmate patients. The law authorizes the State Department of Health to award one or more competitive grants to public hospitals or health care facilities for programs which deliver medical and other health care services through a telemedicine system.
Okla. Stat. tit. 36 § 6801 enacts the Oklahoma Telemedicine Act, and provides that health care plans cannot deny coverage for health care services provided through audio, video or data communications. This would allow, for example, compensation for patient consultations, diagnoses, and the transfer of medical data through telecommunications technology. The measure excludes telephone and facsimile communications from the term "telemedicine." It also requires the informed written consent of the patient for the provision of telemedicine health care services. **Okla. HB 2090 (2004)** repeals tit. 63 s. 1-2701 concerning the Telemedicine Advisory Council.
Okla. HB 1650 (2003) Relates to public healh and safety; authorizes public law enforcement or public health agencies to use 911 service infromation to notify the public relative to an emergency in cities with a certain population, requires agencies to establish confidentiality procedures and methods.
Okla. SB 1284 (2004) Relates to the Corporation Commission. This amends 17 O.S. 2001, Section 139 and 109 which relates to the Oklahoma Telecommunications Act of 1997. It adds a county health department, city-county health department, and federally qualified health centers are eligible to recieve specified Special Universal Services in the form of a telecommunications line or wireless communication sufficient for providing clinical and health consultation services. (Chapter # 409)

Oregon

Or. Rev. Stat. § 677-135 et seq. (1999) prohibits a person from engaging in the practice of medicine across state lines unless the person is properly licensed (except in certain situations, such as when an out-of-state physician consults with an Oregon physician). The Board of Medical Examiners may issue to an out-of-state physician a license for the practice of medicine across state lines if the physician holds a full, unrestricted license to practice medicine in any other state

Puerto Rico

P.R. Laws Ann. § 20-115-6001 et seq. (1998) creates the Telemedicine Regulating Act. The law requires physicians to have a special license to practice telemedicine. It includes provisions for patient confidentiality and informed consent, and provides exceptions to the licensure requirement in case of emergency.

Tennessee

TN S 652 (1999) allows the transfer of patient information to an out-of-state physician who is not licensed in Tennessee in certain situations, such as for second opinions.
Tenn. Code § 63-6-231 provides that the transfer of patient medical information to a person in another state who is not licensed to practice medicine or osteopathy in the state of Tennessee, using any electronic, telephonic or

fiber optic means or by an other method, constitutes the practice of medicine or osteopathy if such information is employed to diagnose and treat people physically located within the state of Tennessee. In addition, the law provides definitions when such transfer of medicine does not constitute the practice of medicine.

Texas

Tex. Civ. Stat. Ann. Art. 7-71-4528b (1999) adopts the Nurse Licensure Compact. The Compact facilitates coordination among states by creating a "coordinated licensure information system." A license to practice registered nursing issued by a home state will be recognized as authorizing a multistate licensure privilege to practice as a registered nurse in such party state.

Tex. Ins. Code § 21.53F prohibits certain health benefit plans from excluding a medical service solely because the service is provided through telemedicine. Telemedicine services may be subject to deductible, copayment or coinsurance requirements not to exceed requirements for the same face-to-face services. Telemedicine providers are required to obtain patient consent before telemedicine services are initiated and to ensure confidentiality of medical information. The act also authorizes the Texas State Board of Medical Examiners to adopt rules to ensure appropriate care and prevent abuse and fraud relating to telemedicine claims and records.

Tex. Gov. Code § 531.0215 and Civ. Stat. art. 4495b, Sec. 5.11 requires the Health and Human Services Commission to develop and implement a system for reimbursement of Medicaid services performed using telemedicine and to encourage certain providers to participate as providers of telemedicine. The commission is prohibited from requiring that a service be provided through telemedicine when the service can reasonably be provided through face-to-face consultation in the community in which the patient resides or works. The act amends the Medical Practice Act to authorize the Texas State Board of Medical Examiners, in consultation with the Health and Human Services Commission and the commissioner of insurance, to adopt rules to ensure that appropriate care is provided to Medicaid patients who receive telemedicine services and to prevent abuse and fraud in the use of telemedicine services for Medicaid patients.

Tex. Gov. Code § 531.02173 et seq. (2003) gives the Health and Human Services Commission greater authority related to the reimbursement of telemedicine services through Medicaid and other government-funded health programs. (SB 691)

Tex. Gov. Code § 531.047 provides for Medicaid reimbursement for a telemedical consultation between a physician who practices in a rural nonprofit health facility, an accredited medical school, or a teaching hospital and a physician who has a private rural health practice or who practices in a rural nonprofit health facility. Reimbursement for a telemedical consultation is required to be at the same rate as for a comparable in-person consultation, and a request for reimbursement may not be denied solely because an in-person consultation did not occur. A health facility that receives reimbursement for such consultations is required to establish quality of care protocols and patient confidentiality guidelines.

Texas Senate Bill 1340(2005) Relates to the regulation and reimbursement of health care services provided through telehealth or telemedicine under the state Medicaid program**. Signed by Governor, June 17, 2005. Chapter No. 370.**

Utah

Utah Code Ann. § 26-9f-101 (2000) creates the Utah Telehealth Commission, defines "telehealth" and requires the Commission to serve as an information clearinghouse, and to advise state officials on telemedine issues, including budgetary needs. The Commission can create and administer telehealth programs and distribute telehealth grants.

Utah Code Ann. § 58-31c-101 et seq. (1999) amends the nurse registration interstate compact. Provides that a nurse licensed by a party state whose license is in any way restricted, may not practice as a registered nurse in Utah without the express permission of the board of nursing.

Utah Code Ann. § 58-17a-611 (2001) appropriates $100,000 for FY 2001-2002 to the Department of Health Bureau of Primary Care, Rural and Ethnic Health to establish and oversee a rural telepharmacy system. (HB 89)

Utah Code Ann. §63-55-226 (2002) changes the sunset date of the Utah Telehealth Commission from July 1, 2002 to July 1, 2005.

Vermont

2000 VT HB 738 specifies that licensed health care providers who provide services via the internet or other electronic means are providing services in the state and are subject to the board's jurisdiction.

Virginia

Va. Code § 32.1-19.1 (1999) requires an annual report to the Governor and the General Assembly on the status of telemedicine initiatives and recommendations for improvements. **REPEALED by 2004 SB 278.**
1998 Va. Acts, H. Jt. Res. 210 requests the Joint Commission on Health Care to study quality of care and reimbursement issues related to telemedicine.
Va. Code § 32.1-19.1 (2004) Repeals the statute that requires the Commissioner of Health to annually report by October 1 to the Governor and the General Assembly on the status of telemedicine initiatives by agencies of the Commonwealth. (SB 278)

West Virginia

W. Va. Code § 30-3-13 (1999) specifies that a person engaged in the practice of telemedicine is considered to be engaged in the practice of medicine within West Virginia and is subject to the licensure requirements of the state. Licensure requirements do not apply to physicians or podiatrists located at a tertiary care or university hospital outside West Virginia who consult or render second opinions on an irregular or infrequent basis (i.e., occurs less than once a month or less than twelve times in a calendar year).
1996 W. Va. Acts, Chap. 119 (SB 591) requires establishment of a plan and funding recommendations for development and implementation of a multifaceted instructional technology strategy that includes the expansion of distance learning and technology networks throughout the higher education systems to enhance teaching and learning.

Wisconsin

Wis. Stat. § 441.06(4) adopts the Nurse Licensure Compact.

Wyoming

Wyoming House Bill 258(2005) authorizes a licensed pharmacy to practice telepharmacy. **Signed by Governor, March 3, 2005. Chapter No. 192.**

Source: http://www.ncsl.org/programs/health/teleleg.htm

Medicaid State Profiles

Arkansas

Medicaid recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for the telemedicine services.
The state uses specific codes to identify telemedicine services. The state contact is Will Taylor (501) 682-8362.

California

Medicaid recognizes physician consultations (medical & mental health) when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for telemedicine services.
The state uses consultative CPT codes with the modifier "TM" to identify telemedicine services. The state contact is Dr. Michael Farber (916) 657-0548.

Georgia

Medicaid recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for telemedicine services.
The state uses specific local codes to identify the consultation furnished at the hub site. No special codes or modifier is used at the spoke site. The state contact is Sherley Benson (404) 657-7213.

Illinois

The Medicaid agency recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for telemedicine services.
The state uses specific codes to identify telemedicine services. The state contact is R. Calluza or Maryann Daily (217) 782-2570.

Iowa

Medicaid recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is based on the state's fee-for-service rates for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for telemedicine services.
Specific local codes are used for the add-on payment and CPT codes with the modifier "TM" is used to identify the consultations. The State contact is Marty Swartz (515) 281-5147.

Kansas

Medicaid recognizes home health care and mental health services already covered by the state plan when furnished using teleconferencing. Home health is limited to certain services.
Payment is on a fee-for-service basis for the mental health services, which is the same as the reimbursement for covered services furnished in the conventional manner. Compensation for home health care via telemedicine is made at a reduced rate. Reimbursement is made for only the service furnished at the hub site.
Local codes have been established to specifically identify home health services furnished using visual communication equipment. No special modifiers are used for mental health services. The state contact is Ms. Fran Seymour-Hunter (785) 296-3386.

Louisiana

The Medicaid agency recognizes physician consultations when furnished using interactive video teleconferencing. Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke site) for the telemedicine services. Physician Assistants are allowed to perform the service using telemedicine if they are authorized by a primary physician, which is the only one that is authorized to bill.
The State uses consultative CPT codes. The state contact is Ms. Kandice McDaniels (504) 342-3891, E-mail: Kmcdanie@dhhmail.dhh.state.la.us.

Minnesota

The Medicaid agency recognizes physician consultations (medical and mental health) when furnished using interactive video or store-and-forward technology. Interactive video consultations may be billed when there is no physician present in the emergency room, if the nursing staff requests a consultation from a physician in a hub site. Coverage is limited to three consultations per beneficiary per calendar week.
Payment is on a fee-for-service basis, suing the same payment rate as for covered services furnished in a conventional, face-to-face manner. Payment is made at both the hub and spoke sites. No payment is made for transmission fees.
Minnesota uses consultation CPT codes with the modifier "CT" for interactive video services and the modifier "WT" for consultations provided through store-and-forward technology. Emergency room CPT codes are used with a "GT" modifier for interactive video consultations done between emergency rooms. The state contact is Christine Reisdorf (651) 296-8822.

Montana

The Medicaid Agency recognizes any medical or psychiatric service already covered by the state plan when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for the telemedicine service.
No special codes have been developed. Providers use codes from the existing CPT. The state contact is Dave Thorsen (406) 444-3634.

Nebraska

The Medicaid agency recognizes most state plan services when furnished using interactive video teleconferencing. In general, services are covered so long as a comparable service is not available to a client within a 30-mile radius of his or her home. Services specifically excluded include medical equipment and supplies; orthotics and prosthetics; personal care aide services; pharmacy services; medical transportation services; and mental health and substance abuse services and home and community-based waiver services provided by persons who do not meet practitioner standards for coverage.
Payment is on a fee-for-service basis, which is the same as reimbursement for covered services furnished in the

conventional, face-to-face manner. Reimbursement is made at both the hub and spoke sites. Payment for transmission costs are set at the lower of the billed charge or the state's maximum allowable amount.
Billing and coding requirements will vary depending on who bills for the service and which claim form is used. The state contact is Dr. Chris Wright (402) 471-9136.

North Carolina

The Medicaid agency recognizes initial, follow-up or confirming consultations in hospitals and outpatient facilities when furnished using real-time interactive video teleconferencing. The patient must be present during the teleconsultation.
Payment is on a fee-for-service basis. The consulting practitioner at the hub site receives 75 percent of the fee schedule amount for the consultation code. The referring practitioner at the spoke site receives 25 percent of the applicable fee. Teleconsultations are billed with modifiers to identify which portion of the teleconsult visit is billed; i.e., the consulting practitioner at the hub site uses a GT modifier and the referring practitioner at the spoke site uses a YS modifier. The state contact is Janet Tudor (919)857-4049.

North Dakota

Medicaid recognizes specialty physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for the telemedicine services.
Current CPT codes for consultative services are used with a "TM" modifier to specifically identify covered services which are furnished by using audio visual communication equipment. The state contact is David Zetner (701)328-3194.

Oklahoma

Medicaid recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke site) for the telemedicine services.
The state uses consultative CPT codes. The state contact is Ms. Nelda Paden (405) 530-3398, E-mail: Padenn@ohca.state.ok.us.

South Dakota

Medicaid recognizes physician consultations when furnished using (interactive & non-interactive) video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for the telemedicine services.
The state uses consultative CPT codes with a "TM" modifier to identify telemedicine services. The state contact is Linda Waldman (605) 773-3495.

Texas

The Medicaid agency recognizes physician consultations (teleconsultations) when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional face-to-face manner. Reimbursement is made at both ends (hub and spoke site) for the telemedicine services. Other health care providers, such as advanced nurse practitioners and certified nurse midwives are allowed to bill, as are "Rural Health Clinics and Federally Qualified Health Centers."
The state uses consultative CPT codes with the modifier "TM" to identify telemedicine services. The state contact is Nora Cox Taylor (512) 424-6669, E-mail: nora.taylor@hhsc.state.tx.us.

Utah

The Medicaid agency recognizes the following services when furnished using interactive video teleconferencing: mental health consultations provided by psychiatrists, psychologists, social workers, psychiatric registered nurses and certified marriage or family therapists; diabetes self management training provided by qualified registered nurses or dieticians and; services provided to children with special health care needs by physician specialists, dieticians and pediatricians when those children reside in rural areas.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both the hub and spoke sites for diabetes self management training services and services provided to children with special health care needs. Reimbursement is made only to the consulting professional for mental health services. Payment is made for transmission fees.
The state uses CPT codes with GT and TR modifiers to identify telehealth services. The state contact is Mr. Blake Anderson (801) 538-9925.

Virginia

The Medicaid Agency recognizes, as a pilot project, medical and mental health services already covered by the state plan when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for only medical services.
The state uses specific local codes to identify telemedicine services. The state contact is Jeff Nelson (804)371-8857.

West Virginia

Medicaid recognizes physician consultations when furnished using interactive video teleconferencing.
Payment is on a fee-for-service basis, which is the same as the reimbursement for covered services furnished in the conventional, face-to-face manner. Reimbursement is made at both ends (hub and spoke sites) for the telemedicine services.
The state uses consultative CPT codes with the modifier "TV" to identify telemedicine services. The state contact is Laure L. Harbert (304) 926-1718.

Source: http://www.cms.hhs.gov/Telemedicine/03_StateProfiles.asp#TopOfPage

Endnotes

[1] Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator, April 27, 2004, Executive Order, President George W. Bush http://www.whitehouse.gov/news/releases/2004/04/20040427-4.html

[2] Promoting Quality and Efficient Health Care in Federal Government Administered or Sponsored Health Care Programs, August 22, 2006, Executive Order, President George W. Bush http://www.whitehouse.gov/news/releases/2006/08/20060822-2.html

[3] http://www.hhs.gov/healthit/standards.html

[4] http://www.hhs.gov/healthit/chiinitiative.html

[5] http://www.hhs.gov/news/press/2005pres/20051110.html

[6] http://www.azgita.gov/tech_news/2006/arizona%20health-e%20connection%20roadmap.pdf

[7] http://www.mahealthdata.org/

[8] www.ihealthbeat.org

[9] www.dbmotion.com/content/Resources/dbMotionRHIO_WhitePaper.pdf

[10] http://endingthedocumentgame.gov

[11] http://ccbh.ehealthinitiative.org/communities/community.aspx?Section=102

[12] http://aspe.hhs.gov/sp/nhii/LHII-Lorenzi-12.16.03.pdf#search=%22strategies%20for%20creating%20successful%20local%20health%20information%20infrastructure%20initiatives%22

[13] http://www.connectingforhealth.org

[14] http://www.ansi.org/standards_activities/standards_boards_panels/hisb/hitsp.aspx?menuid=3

[15] http://www.himss.org/ASP/topics_cpriToolkit.asp?faid=78&tid=4

[16] http://www.rti.org/page.cfm?objectid=0AD0F1AC-B38F-42892481FDE5E224511

[17] http://www.pageweavers.com/cttc/a_history.html

[18] http://www2.kumc.edu/telemedicine/programs/telekidcare.htm

[19] http://www.uams.edu/angels/

[20] http://www.utmb.edu/telehealth

[21] http://www.lvh.org/cwo/About_Us/Our_Values/index.php?id=18&id2=800&id3=269&page_id=1820

[22] http://telepharmacy.ndsu.nodak.edu/publications/History_Telepharmacy_ND.htm

[23] http://www.mc.uky.edu/kytelecare/proact.asp

[24] http://www.utahtelehealth.net/general.html

[25] http://jcmc.indiana.edu/vol6/issue4/whitten2.html

[26] http://www.rbha.net/

[27] Second Annual Survey of State, Regional and Community-Based Health Information Exchange Initiatives and Organizations – eHealth Initiative Foundation 2005

[28] In Marshall, travel savings in excess of $300 per patient seen via the Missouri Telehealth Network. At this level of savings a reduction of 92 transports pays for the equipment and first year overhead. At this level of savings a reduction of 62 transports pays for the annual recurring costs. Better continuity and quality of the care of the patient due to the patient's caregivers being present during the clinical encounter by telemedicine. Transportation costs for Medicaid patients were more than 3.5 times higher than the cost of the physician visit for Missouri tax payers.

[29] Institute of Medicine Report, 1988.

Works Cited

05-628 GAO, "Health Information Technology: HHS Is Taking Steps to Develop a National Strategy", May 2005. Available at http://www.gao.gov/new.items/d05628.pdf. Accessed April 10, 2006.

Markle Foundation. Achieving Electronic Connectivity in Healthcare. Connecting for Health: a public-private collaboration. New York, NY: Markle Foundation; July 2004. Available at: http://www.connectingforhealth.org. Accessed April 1, 2006

Markle Foundation. Key Themes. Connecting for Health: a public-private collaboration. New York, NY: Markle Foundation; July 2003. Available at: http://www.connectingforhealth.org. Accessed April 4, 2006.

Office of the National Coordinator for Health Information Technology. The Collaborative Response to the ONCHIT Request for Information. Washington DC: ONC; January 18, 2005. Available at http://www.hhs.gov/healthit/. Accessed April 4, 2006.

Public Health Informatics Institute. Guiding principles for effective health information systems. Decatur, GA: Public Health Informatics Institute; December 2004. Available at: http://www.phii.org/resources.html. Accessed April 6, 2006.

ASTM International. ASTM E2369-05, standard specification for Continuity of Care Record (CCR). Available at: http://www.astm.org. Accessed May 24, 2006.

Strategic Framework: The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care; Department of Health and Human Services, July 2004.

The Common Framework: Technical Issues and Requirements for Implementation. Available at: http://www.connectingforhealth.org/commonframework/docs/T1_TechIssues.pdf. Accessed August 20, 2006.

To Err is Human: Building a Safer Health System, Institute of Medicine, 2000

Kansas Health Information Technology / Health Information Exchange Policy Initiative, April 2006.

Kansas Health Information Exchange Roadmap, Briefing Paper, January 10, 2006.

Roadmap for the Mobilization of Electronic Healthcare Information in Texas, Preliminary Report, July 20, 2006.

Arizona Health-e Connection Roadmap, April 4, 2006.

Minnesota e-Health Initiative: Roadmap and Preliminary Recommendations for Strategic Action, January 2005.

Better Care, Lower Costs: You Deserve to Know. Available at http://www.hhs.gov/transparency/transparencybookletfinal.pdf#search=%22better%20care%20lower%20costs%22. Accessed August 31, 2006.